

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

Agricultural Research Center
Beltsville, Maryland 20705

NOTES FROM THE AREA DIRECTOR

No. 6

January 4, 1973

Employee Information

Dr. A. G. Gillaspie, Jr., transferred to the Agricultural Research Center Beltsville, on December 4, 1972, after seven years at the U.S. Sugarcane Field Station, Houma, Louisiana. Dr. Gillaspie is now with the Applied Plant Pathology Laboratory, Plant Protection Institute. He will work on purification and characterization of sugarcane and sweet sorghum viruses and will be in charge of the sugarcane quarantine work.

Drs. G. C. Papavizas and J. A. Lewis, Soilborne Diseases Laboratory, represented ARS in the annual meeting of the Regional Project NCR-74 entitled "Mechanisms of Survival of Root-Infecting fungi in Soil" held at Wooster, Ohio on December 4-5.

Dr. Lind Sanford of the Vegetables Laboratory attended the NCR-84 Meeting on Potato Genetics, Chicago, Illinois, December 5-6.

Dr. Allan Stoner of the Vegetables Laboratory attended the Mid-Atlantic Food Processors Association Convention held in Atlantic City, New Jersey, November 28-29 and presented a discussion at the Tomato Session on "Challenges of Tomato Breeding."

Drs. William Cantelo and James Schalk of the Vegetables Laboratory attended the Joint Meeting Entomological Societies of America and Canada, Quebec, Canada, November 27-30. Dr. Cantelo presented a paper entitled "The Use of Compound Chromosomes to Alter the Genetic Structure of Drosophila melanogaster populations." Dr. Schalk presented a paper entitled "The Biology of Callosobruchus maculatus F. Attacking Cowpeas in Iran."

Radio Interview On Cockroaches: On December 7, 1972, Dr. Ashley B. Gurney, Systematic Entomology Laboratory, gave an interview of about 15 minutes at National Public Radio, Washington, D.C., on the subject of cockroaches, their occurrence, importance, diseases carried and principles of control. This was by Invitation, apparently in response to interest generated by a recent magazine article by a popular writer. The interview was on the program "All Things Considered" which is broadcast at 5 to 6:30 p.m. on WETA Radio over about 126 radio stations, in some 40 states, of the National Public Radio System.

About five minutes from the taped interview were broadcast at about 6:00 p.m. on December 8, dealing mainly with the prevalence, importance, and potentiality for disease transmission of cockroaches.

Cooperative Activities

Glycoalkaloids Workshop Held: Drs. Raymon E. Webb, Lind L. Sanford, Stephen L. Sinden, and Kenneth L. Deahl of the Vegetables Laboratory attended a Workshop on Glycoalkaloid in the Potato, Eastern Utilization Research and Development Laboratory, Philadelphia, Pennsylvania, on December 7. Drs. Webb, Sanford, and Sinden discussed their research on glycoalkaloids in the potato.

Rhizosphere Ecology Studies: Dr. G. C. Papavizas, Leader, Soilborne Diseases Laboratory, and Dr. R. M. Sayre, Plant Nematology Laboratory, represented ARS in the first committee meeting of a new Regional Project entitled "Rhizosphere Ecology as Related to Plant Health and Vigor" held at Clemson, South Carolina on December 11-12. This new project will determine rhizosphere microorganisms (including mycorrhizae), root exudates, and the interaction of these parameters with root-infecting fungi and nematodes.

Biological Effects of Mycoviruses to be Studied: A cooperative project has been established between Boyce Thompson Institute for Plant Research, Yonkers, New York and the Soilborne Diseases Laboratory to locate suitable mycoviruses of various root-infecting fungi and to determine the biological effects of the viruses upon their fungal hosts. The pathological aspects of the project will be done here at Beltsville.

Seminar on Disease Fungi: Drs. J. A. Lewis and P. B. Adams of the Soilborne Diseases Laboratory recently presented a seminar to a group of 25 horticultural students from Mercer Community College attending the ARC for the day. The materials for presentation included research done in the Soilborne Diseases Laboratory on root diseases of peas, beans, onions, lettuce, and sugarbeets caused by various fungi.

Putting Research to Work

New Hybrid Spinach Developed: Del Monte Corporation sent a letter to the Administrator expressing their appreciation for the cooperation of Drs. H. A. Jones and Raymon E. Webb in the development of a hybrid spinach with a practical field level of tolerance to white rust. The hybrid was developed utilizing germplasm developed by Drs. Jones and Webb of the Vegetables Laboratory.

Meeting Called to Describe Sludge Composting Process: Details of an experimental procedure for treating sewage sludge by composting were described at a special public meeting called by Dr. J. D. Menzies and John W. Walker of the Biological Waste Management Laboratory and officials of the Maryland Environmental Service. The meeting was held December 19, in response to growing community anxiety over a new ARS-MES joint research project on composting sewage sludge from the nearby Blue Plains Sewage Treatment Facility. About 60 people attended the meeting which resulted in much discussion and many questions. Drs. Wylie D. Burge and Elliott Epstein assisted Drs. Menzies and Walker in answering technical questions related to the influence of the process on survival of pathogens and other environmental effects.

The meeting provided a better understanding by all concerned and materially assisted in obtaining final approval of the project by the County Government.

Infrared Soybean Meters Checked; Dr. M. E. Whitten, Seed Quality Laboratory, spent December 6 at the DeKalb County Farm Bureau (Illinois) chemical laboratory where he assisted in preparing the laboratory for checking out the infrared oil-moisture-protein meters developed in the Institute's Instrumentation Laboratory. These instruments are now being manufactured commercially. Mr. Gordon Rapp, Director, Illinois Department of Agriculture, requested this help in testing the new instruments.

Rotterdam Laboratory Technicians Visit Beltsville and Hyattsville: Anton Bongers and Ben Hillebrand, research technicians and Dutch nationals from the ARS European Research Unit in Rotterdam, recently concluded a 30-day familiarization tour of U.S. producing areas, food distribution centers, and ARS research facilities with a 4-day visit to Washington, Beltsville, and Hyattsville. The itinerary for the visitors included visits to the Horticultural Crops Research Laboratory, Instrumentation Laboratory, Post Harvest Physiology Laboratory, meetings with National Programs Staff and International Programs Staff. Also included in the tour arranged by the Transportation and Packaging Research Laboratory were visits to the local food distribution centers of Safeway, Giant, and Grand Union food stores at Landover, Maryland, and meetings with officials of the Foreign Agricultural Service concerned with the program of the ARS European Research Unit for Transportation and Packaging.

Assistance to Defense Supply Agency: At the request of the Headquarters, Defense Personnel Support Center, William R. Black and C. J. Nicholas of the Transportation and Packaging Research Laboratory recently conducted a demonstration and training session for Defense Supply Agency personnel in laying out and using the ARS-developed modified bonded-block loading pattern for refrigerated van container shipments of lettuce to overseas military bases. The demonstration and training sessions, in which containers of different inside widths and overall lengths were used, were held at the

DSA facilities in Alameda, California. Additional training sessions for DSA field personnel and Federal-State inspectors were held in the producing areas at Yuma, Arizona.

Participation in Standardization Work: Phil Breakiron, Transportation and Packaging Research Laboratory, recently attended meetings of two committees of the American National Standards Institute concerned with the development of design and performance specifications for pallets and for various types of van containers. He reports that excellent progress has been made in the development and approval of size, design, and performance standards in this country and on the international front through the International Standards Organization. According to Mr. Breakiron, agreement on international standards for packages, pallets, and van containers will go a long way in helping to increase the efficiency and reduce the costs of international trade in agricultural and food products.

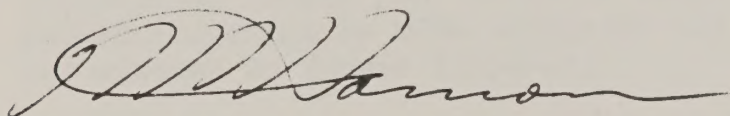
Assistance to the Maritime Administration: The Transportation and Packaging Research Laboratory has been requested by the Maritime Administration of the U.S. Department of Commerce to assist in developing a suitable program for a 1-day conference of ocean carriers, government officials, port authorities, and other segments of maritime industry. The proposed conference which will be devoted to assessing the potential and present technology for exporting U.S. perishable agricultural and food products to overseas markets by U.S. flag ships, will be held in Washington on February 1. The Department has been asked to provide four speakers for the conference. Robert F. Guilfooy of this Laboratory has been asked to serve as a coordinator for the Department's part in this conference.

Research on Handling and Freezing of Pork: B. Hunt Ashley and George M. James, Transportation and Packaging Research Laboratory, have completed the first phase of field work on a study of freezing pork products on pallets and in pallet containers. This research, which will evaluate the product shrinkage in freezing as related to different methods of packaging, was undertaken at the facilities of the United Refrigerated Services Cold Storage in Wichita, Kansas, and involved 27 pallet loads of pork bellies. The work is being partly supported by the Refrigeration Research Foundation.

Apple Packaging Problems: On a recent visit to two New England apple packing plants, Donald R. Stokes found 23 different size shipping containers being used for McIntosh and Red Delicious apples--one packer used nine different size boxes and the other packer used fourteen different size boxes. Data was obtained on the comparative sales of apples in various types of containers--cell packs are used for export shipments and cell packs, tray packs, consumer size trays and bags are used for domestic shipments. The demand for apples in overwrapped consumer trays is increasing (the packaging of apples in shrink film overwrapped trays was developed by ARS package researchers in the early 60's and in film bags in the late 40's). Both packers were surprisingly optimistic about further expansion of export sales of McIntosh apples to the United Kingdom in spite of imminent

entrance of the UK into the European Economic Community and the likelihood of higher tariff barriers. U.K. importers have recently been paying as high as \$16 and \$17 per box for U.S. McIntosh apples.

Processing Facilities Study: Charles F. Stewart, Dairy Marketing Specialist, of the Dairy and Poultry Products Marketing Laboratory, has completed a study of a cheddar cheese processing plant operation in Crossville, Tennessee. The processing facility serves as a market outlet for the surplus raw milk produced in the immediate area, and helps to stabilize the local economy by providing employment opportunities. The study involved an evaluation of the present operation to determine the changes needed to meet state sanitation regulations, achieve improved operating efficiency, and provide for greater plant capacity by better utilization of available floor space. A layout for the remodeled facility was developed that provides for an additional production capacity of approximately 33 percent annually while avoiding major structural changes in the facility. The study was conducted in cooperation with Herbert Holt, Assistant Professor, Department of Food Science and Technology, University of Tennessee.

A handwritten signature in dark ink, appearing to read "A. A. Hanson", with a long, sweeping horizontal line extending to the right.

A. A. Hanson
Acting Area Director

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

Agricultural Research Center

Beltsville, Maryland 20705

NOTES FROM THE AREA DIRECTOR

No. 7

January 18, 1973

Employee Information

Mr. Robert G. Leek, a Zoologist at the Animal Parasitology Institute, recently spoke and showed slides of his and the Institute's work to the 5th grade classes at Margaret A. Edmonston Elementary School in Laurel. The students are discussing professions, trades, and other vocations as part of a unit of study on Career Development and have had such diversified weekly guests as Minister, Nurse, Mechanic, and Kennel Operator. Mr. Leek has commented that the experience was enjoyable and rewarding and that the illustrated "Thank you" notes he received are priceless. This type of public relations by USDA employees can be a good method of communicating our mission to future taxpayers.

Appointment to Journal Editorial Board: Dr. Morton Beroza of the Organic Chemical Synthesis Laboratory has been appointed to the Editorial Board of the Journal of Official Chemists.

Teaching Chemistry: G. Muschik, P. Sonnet and R. Sarmiento of the Organic Chemical Synthesis Laboratory are teaching chemistry during the evening at the University of Maryland.

Honors and Awards

Paper Presented on Hormone Processes of Insects: Dr. W. E. Robbins, Leader, Insect Physiology Laboratory, presented an invitational paper on "Chemicals that Disrupt the Hormone Regulated Processes of Insects" at the International Symposium on the Control of Lice and Louse-Borne Diseases sponsored by the Pan American Health Organization in Washington, D.C. December 4-6, 1972.

Honor for Work on Helminth Parasites: Dr. J. R. Lichtenfels of the American Parasitology Institute was recently honored by the Board of Regents of the University of Nebraska. Dr. Lichtenfels has been appointed a Research Affiliate of the Harold W. Manter Laboratory, Division of Parasitology of the University of Nebraska State Museum. This appointment is in recognition of Dr. Lichtenfels' achievements in the systematics and identification of helminth parasites of domestic and wild animals.

Society President Elected: Mr. Victor E. Adler, Biologically Active Natural Products Laboratory, was elected President of the Entomological Society of Washington for 1973.

Cooperative Activities

Conference Held on Insect Sex Attractants: Mr. Martin Jacobson, Biologically Active Natural Products Laboratory, attended a collaborative research conference with members of the Hawaiian Fruit Fly Laboratory at Honolulu, December 11-12. The conference was held to discuss methods for putting to practical use the recently identified Mediterranean fruit fly sex attractants and to coordinate plans for the continued joint investigation of oriental fruit fly sex pheromones, melon fly ovipositional stimulants, and attractants for all three species from plant products.

Rice Quality Discussed: Dr. C. Roy Adair of the Applied Plant Genetics Laboratory was the United States delegate to the 14th Session of the Working Party on Rice Production and Protection, International Rice Commission, FAO, which was held in Bangkok, Thailand, November 6-10, 1972. His paper on the improvement of quality in rice in the United States was one of several presented in the discussion of this topic. There were 18 countries and four foundations and international organizations represented. In addition to the discussion on the improvement of the cooking and nutritional characteristics of rice, yield improvement of rice varieties and control of rice diseases and pests were considered. This meeting is held biennially and affords an opportunity for the exchange of rice research findings on an international basis. Dr. Adair also reviewed PL-480 Research Projects in India and discussed the rice research program in Afghanistan with U.S.-AID officials.

Putting Research to Work

Ornamentals Laboratory Open House: The Ornamentals Laboratory of the Plant Genetics and Germplasm Institute held its biennial Open House for Ornamental Plant Growers on January 11-12, 1973 at the Center. The 2-day session was attended by more than 550 people from 27 States, Canada and Mexico. The research presentations, greenhouse tours, demonstrations, and discussion periods were designed to help FOCUS on recent research progress in the Agricultural Research Service on the exploration, culture, breeding, and protection of ornamental plants. The fact finding mission was officially welcomed by Dr. A. A. Hanson, Area Director, Beltsville. Mr. Everett Conklin, President of the Society of American Florists, Montvale, New Jersey, responded for the growers.

Visiting Dignitaries

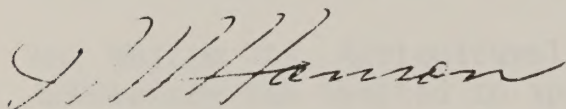
A recent visitor to the Soilborne Diseases Laboratory was Dr. Akos Mesterhazy of the Cereal Research Institute, Szeged, Hungary. He visited the Laboratory to discuss problems of mutual interest on Fusarium and other soilborne plant pathogens.

Other visitors to the Soilborne Diseases Laboratory were Drs. P. A. Urech and V. Morton, CIBA-GEIGY, from Basel, Switzerland and West Palm Beach, Florida, respectively. Drs. Urech and Morton visited Dr. Papavizas to discuss problems related to fungicides used for the control of soilborne plant pathogens. On January 3, 1973, Dr. Theodor Staub from Switzerland and

Drs. P. D. Sterling and M. G. Schnappinger from New York and Maryland, respectively, all with CIBA-GEIGY, also visited with Drs. Papavizas and Lewis to discuss problems of biological and chemical control of soilborne root-infecting fungi.

More Visitors in 1972: The Visitors Staff reports a record number of visitors - 20,938 - during the past year. The group included 1442 foreign scientists and students, 1838 American scientists, 740 University students, 549 educators and 10,395 from local schools. The others were from the general public and other government agencies.

I feel that the Visitors Staff is doing a fine job with a reduced staff and new duties which have recently been assigned.

A handwritten signature in cursive script, appearing to read "A. A. Hanson".

A. A. Hanson
Acting Area Director

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NOTES FROM THE AREA DIRECTOR

No. 8

February 1, 1973

Employee Information

R. E. Hardenburg of the Horticultural Crops Marketing Laboratory represented ARS at the NEM-27 Annual Meeting on Fruit Marketing December 12-14 at Rutgers University.

H. S. Ricker and R. E. Hardenburg of the Agricultural Marketing Research Institute attended a joint meeting of the USDA and the National Association of Retail Grocers Research Committee on a total food-store sanitation program and related research needs, December 12 in Washington, D.C.

Mr. Hajime Ota, Agricultural Engineer in the Non-ruminant Animal Nutrition Laboratory was invited to speak to a broiler producers' group at Moorefield, West Virginia. Mr. Ota discussed the poultry calorimeter and environmental studies conducted at Beltsville and poultry production in Europe and Japan before approximately 30 producers on January 16, 1973.

Drs. A. K. Stoner and T. H. Barksdale, Vegetable Laboratory, attended the Maryland Commodity Day at Easton, Maryland, January 12 and discussed, informally, their tomato improvement program.

Dr. George A. White, Leader, Germplasm Resources Laboratory, recently appeared on the ARS sponsored television shows "Across the Fence" and "Down to Earth". Dr. White discussed the agronomic and utilization prospects for kenaf, a source of paper pulp; Crambe, a new seed oil source of erucic acid; and meadowfoam, a potential oil substitute for sperm whale oil.

Dr. K. C. Kates, Zoologist in the Animal Parasitology Institute, presented an address on "Problems Relating to Control of Internal Parasites of Sheep" at the 108th Annual Convention of the National Wool Growers Association, held at the Washington Hilton from January 22-25, 1973.

Dr. Paul A. Putnam of our Area Director's Office spoke at the Beltsville Citizens' Association meeting on January 17. He discussed some of the history of the Center, current research areas, and plans for future use of the Center. He also answered questions from the group regarding these and other topics.

Cooperative Activities

Tobacco Research: The Cigar Research Council will hold its biannual Research Seminar on February 7-9, 1973, at the Center of Adult Education, University of Maryland, College Park. The purpose of this Seminar is to discuss current research programs on tobacco, cigar manufacture and smoking. Several

scientists from the Agricultural Research Center have been invited to attend this Seminar and present their research work.

On February 7, members of the Cigar Research Council will be at Beltsville to meet informally with scientists and discuss our ongoing tobacco research program.

Cooperation in Leukosis Research: Dr. Lyman Crittenden of the Avian Physiology Laboratory attended a research review and planning conference at the USDA Regional Poultry Research Laboratory in East Lansing, Michigan. This trip was made in order to continue to coordinate research on leukosis conducted at the East Lansing and Beltsville laboratories.

Quality of Ground Meat Supplement Studied: A cooperative study was initiated between the Department of Animal Science, University of Maryland, and the Livestock and Meat Marketing Laboratory to determine changes in palatability and chemical composition during frozen storage of ground meat supplemented with soy protein. The research is funded by the U.S. Army Natick Laboratories.

Putting Research to Work

Productivity in the Food Industry: Peter G. Peterson, Chairman of the President's National Commission on Productivity, recently reported that improved productivity in the food industry is of critical importance to meeting the challenge of inflation. One of the objectives of research within the Agricultural Marketing Research Institute is to develop new methods for increasing productivity in the assembly, transport, processing, and distribution of food products. ARS marketing researchers have pioneered in a number of areas dealing with food distribution and retailing. A recent example is the development of an automatic checkout system for the food industry. Gordon Bloom, MIT professor and author of a recent book on Productivity in the Food Industry, has suggested that this checkout technique together with the Universal Product Code is likely to be the most important breakthrough influencing productivity in the food industry during the coming decade.

Dairy Processors Aided: Small processors of dairy products are finding it difficult to compete successfully with the large processors. Mr. Charles F. Stewart, Dairy & Poultry Products Marketing Laboratory, recently responded to a request from two small processors in Tennessee for assistance in updating their processing plant and facilities. Mr. Stewart evaluated the processing facilities and developed new information and a layout for improving operating efficiency. The owners of these two small plants have expressed enthusiastic appreciation for this type of ARS assistance.

Lettuce Transport to Europe: Researchers within the Transportation and Packaging Research Laboratory report that losses of lettuce due to spoilage during export to Europe have decreased dramatically during recent years.

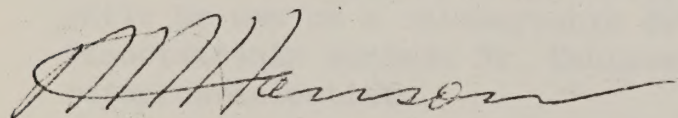
Three years ago losses averaged 25%. Recent experimental shipments by ARS marketing researchers showed that losses could be held to about 1 to 3%. Proper packaging, transportation, and refrigeration is the key to successful marketing and distribution of perishable commodities.

Research to Improve Supermarket Sanitation: A progress report on the development of recommendations for a total store sanitation program was presented at a recent meeting of the joint USDA-NARGUS (National Association of Retail Grocers of the U.S.) committee. Dr. H. S. Ricker of the Food Distribution Research Laboratory and Mr. L. F. Norwood of the Extension Service prepared a checklist of recommended procedures for total store sanitation after studying three demonstration stores and after many conferences with Federal, state and local regulatory agencies. Dr. Ricker also reported on additional research needed and on the progress of his research project on solid waste management at retail stores.

Foreign Visitors

On January 15, Drs. Kinichi Ikenoya and Makota Shisa, Japan Campaign for the Promotion on a Plant Patent Law, Tokyo, Japan; and Dr. Seitaro Fujita, Fujita Seed Company, Ltd., Osaka, Japan, visited Dr. Raymon E. Webb, Leader of our Vegetable Laboratory, to discuss our vegetable improvement program and our varietal release policy and philosophy.

Dr. Mohammad Azam Chaudhary, District Agriculture Officer, Muzaffar ABAD, Azadkashmir, Pakistan, visited Dr. Raymon E. Webb, Vegetable Laboratory, January 11 to discuss our potato improvement program.



A. A. Hanson
Acting Area Director

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BELTSVILLE, MARYLAND 20705

NOTES FROM THE AREA DIRECTOR

No. 9

February 15, 1973

Employee Activities

C. B. Shear, Fruit Laboratory, attended the Lime and Fertilizer Conference of the Pennsylvania Plant Food Educational Society, Inc., January 24-26, 1973. He was invited to speak on the role of calcium in the corking of apples. Corking is deterioration of apple flesh that causes serious waste in processing.

Dr. Lowell T. Frobish of the Nutrition Institute participated in a seminar on January 25 in the Secretary's office for approximately 45 students from the University of Illinois. The students were involved in a one-hour credit travel course. The role of meat production in meeting world food needs and the opportunities for research within ARS were discussed.

Dr. Lloyd V. Knutson, Systematic Entomology Laboratory, has been named a Research Associate in the Ecology Program, Office of Environmental Sciences of the Smithsonian Institution. This appointment is in recognition of Dr. Knutson's outstanding services to the Smithsonian for the past year while he was on a reimbursable detail with that organization. The Research Associateship accords Dr. Knutson many of the privileges of a Smithsonian research scientist.

Reappointment to Chairmanship: Dr. Richard H. Foote, Systematic Entomology Laboratory, has been reappointed Chairman of ARS-SATCOM, a committee originally formed in 1968 by Mr. Edminster to study modern concepts and methods of information handling and their possible application to the research of ARS scientists. Since reorganization, this committee has been reconstituted and has been asked to work in close cooperation with the ARS Publications Committee. In addition to Dr. Foote, members of the new ARS-SATCOM are Dr. Peter H. Heinze, Dr. John A. Newman, and Dr. William B. Ennis, Jr., all of the NPS, Mrs. Iris Ballew of the NTE staff, and Mr. James E. Reynolds, Chief, Publications Branch, ARS Information Division.

Honors and Awards

Maryland Beekeepers Association Honors Mr. Michael: Mr. Albert S. Michael, Bioenvironmental Bee Laboratory, was presented a special award for research benefiting the honey bee industry. The presentation was made by the Maryland Beekeepers Association at their annual meeting at College Park on February 10.

Society President Elected: Dr. Harold W. Fogle, Fruit Laboratory, was elected President of the American Pomological Society on January 30 at the joint meeting of that Society with the Ohio State Horticultural Society in

Columbus. The American Pomological Society has a membership of some 650 horticulturists in the United States and in various foreign countries. The exchange of information on breeding and testing of superior fruit cultivars is the main role of the Society.

Cooperative Activities

Humidity Symposium: R. E. Hardenburg of the Agricultural Marketing Research Institute was a speaker at a symposium on relative humidity for storage of fresh fruits and vegetables at the Annual Meeting of the American Society Heating, Refrigerating, and Air-Conditioning Engineers in Chicago. With improved equipment, the trend is to recommend higher relative humidity (95% +) for many kinds of produce. Plans are underway to purchase new humidity facilities for Beltsville to research optimum humidity conditions for produce.

Marine Transport of Food: Wilson Smith of the Agricultural Marketing Research Institute spoke on "Product quality maintenance" at a Washington, D. C. conference sponsored by the Maritime Administration of the Department of Commerce on Refrigerated Containers for Shipping. About 175 persons from industry interested in shipping, packaging, and containers attended the February 1 meeting.

Radiation of Potatoes: H. W. Hruschka of the Agricultural Marketing Research Institute met in Washington, D. C. with AEC members of the Department of Commerce and the Brookhaven, New York Radiation Development Laboratory to discuss progress on gamma radiation of potatoes for sprout inhibition. Costs of sprout control by radiation still are approximately twice as high as by chemical treatment. The group concluded that development of potato radiation would be assisted, if a private entrepreneur could be found to assume the initial commercial risk.

Calcium in Fruit Studied: Research workers connected with studying calcium metabolism and disorders in fruits held their annual meeting in the Fruit Laboratory on February 2, 1973. The meeting attracted scientists from several States including one from England. C. B. Shear and M. Faust presented evidence that for increasing calcium in the fruit, several factors have to be considered. Increasing calcium in the fruit is not a nutrition problem but a complex orchard management problem of which nutrition is only a part.

Pesticide Disposal: Dr. Philip C. Kearney, Pesticide Degradation Laboratory, has been appointed a consultant to National Research Council's Committee on Military Environment Research. He has been asked to serve on a committee for the development of a research program on pesticide disposal, particularly thermal and biodegradation processes.

Press Conference on Heptachlor: Dr. J. R. Plimmer of the Pesticide Degradation Laboratory took part in a press conference with Dr. C. F. Hammer of Georgetown University and Mr. C. Collier of EPA to discuss the significance of Dr. Hammer's research into the effect of sunlight on heptachlor. Reportedly, heptachlor epoxide is converted by sunlight into a stable substance of greater toxicity.

The research was presented at the 8th Middle Atlantic Regional Meeting of the American Chemical Society held in Washington, D. C. January 14-17.

Cooperative Research on Tobacco: Dr. J. R. Stavely, Tobacco Laboratory, visited tobacco producing areas of the Dominican Republic on January 21-27 and of Puerto Rico on January 28-31. The trip was sponsored by the Cigar Research Council of New York. A major objective was to determine what diseases were occurring on the crop and their relative severity. In addition, seeds were obtained of local cultivars or strains apparently having disease resistance worthy of further testing in the United States.

Research on Biological Control of Snails: Dr. Lloyd V. Knutson of the Systematic Entomology Laboratory has been asked to conduct ecological studies on the biological control of snails in Dezful, Iran. Dr. Knutson's studies will be funded by the Iran Foundation through the Smithsonian Institution. Dr. Knutson will also visit other world authorities on this subject in London, Addis Ababa, Leningrad, Prague, and Brussels. He will also spend some time in Nigeria conducting additional research to support his own long-range taxonomic program.

Foreign Lectures Presented: Dr. James A. Duke, Plant Taxonomy Laboratory, presented lectures on Amerindian Ethnobotany in Chandigarh and Lucknow, India, and in Rawalpindi, Pakistan, during a recent PL-480 review trip. Since the PL-480 projects were concerned with useful plants of India and Pakistan, the scientists who hosted Dr. Duke's lecture, ETHNOBOTANY OF THE CHOCO AND CUNA INDIANS OF PANAMA, were familiar with many of the useful Amerindian plants. Nearly half of the plants used by the Amerindians now occur also in Asia. Dr. Duke's work with the Amerindians of Panama culminated nearly three years of field work, after which he rejoined the Department.

Sheep Parasites Discussed: The 108th Annual Meeting of the National Wool Growers Association was held at the Washington Hilton on January 22-25. Dr. K. C. Kates was invited to speak on internal parasites of sheep. Dr. R. Fayer and R. G. Leek participated in the Animal Health Committee session and distributed a questionnaire on sheep coccidiosis to all registrants. Many of the Wool Growers visited Beltsville during the meeting.

Film on Protozoan Diseases: Dr. Martin Gordon, Professor of Gastroenterology, Yale University, visited Dr. R. Fayer at the Animal Parasitology Institute on January 25 to obtain cinemicrographs of coccidia for his forthcoming film on protozoan diseases.

Research Planning Assistance: The Division of Markets, Virginia Department of Agriculture, has established a Physical Distribution Systems Group. The group met with John C. Bouma and Marvin Volz, Market Operations Research Laboratory on January 26 to discuss research methodology, problems unique to marketing in Virginia, and possibilities for cooperative research efforts.

Participation in Agricultural Show: Dr. D. H. Scott participated in the small fruits program of the Oregon Horticultural Society that was held February 1, 1973, in conjunction with the Northwest Agricultural Show at Portland, Oregon. Dr. Scott's subject was small fruit production in some European countries, especially Italy. Oregon and Washington have the largest acreages in the country of blackberries, raspberries, and strawberries and most of the crops are marketed as frozen pack or canned products. Growers are concerned about foreign competition in U.S. markets and also whether American products might have a place in foreign countries. The meetings were very well attended with 400 to 500 people in attendance.

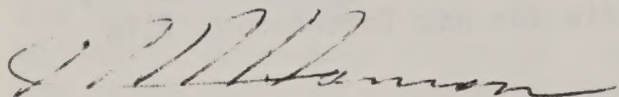
Test Methods for Pesticides: Representing the American Society of Microbiology, Dr. D. D. Kaufman of the Pesticide Degradation Laboratory attended a meeting sponsored by the American Society for Testing Materials, January 16-18, in Philadelphia. The ASTM Committee on Pesticides "E-35" is being organized to establish biological test methods for pesticides. Dr. Kaufman participated in the organization of a subcommittee, "Safety to Man and Environment", whose primary concerns involve various aspects of toxicology and environmental fate of pesticides.

Design Recommendations for Egg Processing Plant Gratefully Accepted: The Dairy and Poultry Products Marketing Laboratory has received a letter of appreciation from an egg processing and distribution firm in Bent Mountain, Virginia, for a study recently conducted by Clarence E. Harris, Poultry Products Marketing Specialist. The study involved an evaluation of the firm's processing and marketing operations and development of recommendations for efficient facilities and work methods. Construction of a new plant, based on Mr. Harris' recommendations, is scheduled to begin in March. It is estimated that the new plant will more than double the efficiency of the operation.

Foreign Visitors

Dr. Jasper E. Van Zanten, Research Director, Sluis en Groot, Enkhuizen, The Netherlands, visited most of the members of the Vegetable Laboratory February 5 and 6, to review current vegetable research.

Dr. F. H. Dodd of the National Institute for Research in Dairying, Reading, England, visited with researchers in the Genetics and Management Laboratory, APGI, on February 2 to discuss mutual problems in mastitis research in England and the United States.



A. A. Hanson
Area Director

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NOTES FROM THE AREA DIRECTOR

No. 10

March 1, 1973

Employee Information

Dr. Reece I. Sailer, Chairman of the Insect Identification and Beneficial Insect Introduction Institute, will retire effective March 2, 1973, in order to accept a position as Research Professor of Biological Control at the University of Florida. Dr. Sailer's government service began in 1942 as USDA's specialist on the taxonomy of heteropterous insects (the true bugs), soon becoming a world authority in this field. Since 1960, when he became Officer-in-Charge of the European Parasite Laboratory in Paris, Dr. Sailer's research and interests have been primarily in the field of biological control, and in this field too, he has become a leading world figure. In 1966, he returned to the States to serve as Assistant Chief of the Insect Identification & Parasite Introduction Research Branch of the Entomology Research Division at Beltsville, and became Chief of the Branch in July 1967. Since the ARS reorganization in July 1972, he has served as Chairman of IIBIII. In these capacities, he has not only provided able leadership and coordination of the Division's biological control program, including the many PL 480 research programs in this area, but his many worldwide contacts enabled him to serve as a guiding influence in enlarging the European Organization Internationale de Lutte Biologique into a truly worldwide organization, the International Organization for Biological Control, and in creating the Western Hemisphere Regional Section of this organization.

A party in Dr. Sailer's honor was held Friday, February 23, in the Conference Room of the new Bioscience Building at Beltsville, on the occasion of his retirement and to wish him well in his new position. Obviously his retirement from ARS after 30 years of outstanding service in insect taxonomy and biological control will mean a real loss to the Department's work in this important area.

Dr. Frank N. Dickinson, Acting Leader of the Animal Improvement Programs Laboratory, was invited to give two reports at the 23rd Annual Study Meeting of the European Association for Animal Production, Commission of Animal Genetics, Verona, Italy, October, 1972. These reports were entitled: "USDA-DHIA Sire Summaries in a Dairy Cattle Population Undergoing Genetic Change" and "A Genetic Base for Estimating the Genetic Transmitting Ability of Dairy Bulls in Populations Undergoing Genetic Change". Prior to these meetings, Dr. Dickinson met with representatives of the Milk Marketing Boards of Scotland and England to discuss revised procedures for the genetic evaluation of dairy bulls in those countries.

On November 16, 1972, Mrs. Patricia C. Jackson of the Plant Stress Laboratory presented a seminar on "Mercury in the Environment and Uptake of Plants" to the Botany Department, University of Maryland. On January 15, Mrs. Jackson presented a talk at the 8th Middle Atlantic Regional Meeting of the American Chemical Society, Washington, D.C., on "Uptake of Mercury by Plants."

Dr. J. R. Lichtenfels, Animal Parasitology Institute, participated in a seminar program for staff and students for the Department of Zoology, University of Maryland at College Park. The topic was "Strain Differences in Nippostrongylus brasiliensis", a nematode parasite of rodents which has been used as a model for research on a fundamental phenomena governing host-parasite systems.

Dr. H. Shimanuki of the Bioenvironmental Bee Laboratory, PPI, participated in a symposium and also presented a laboratory workshop to the Apiary Inspectors of America assembled in annual meeting in Madison, Wisconsin, January 22-24. He also participated in the Annual Meeting of the American Beekeeping Federation in Milwaukee, Wisconsin, January 24-26.

Mr. A. S. Michael of the Bioenvironmental Bee Laboratory, participated in the annual meeting of the American Honey Producers Association held in Tulsa, Oklahoma, January 11-13.

Dr. W. R. Nickle, Plant Nematology Laboratory, PPI, was invited to speak on February 7 on the subject, Insect Parasitic Nematodes, before a combined Plant Pathology-Entomology Graduate Seminar at the University of Maryland.

Dr. William A. Ayers, Soilborne Diseases Laboratory, presented an invitational lecture to the Department of Plant Sciences, University of Western Ontario, Canada, on February 6. The title of Dr. Ayers' presentation was "The influence of soil bacteria on sporangium production by *Phytophthora cinnamomi*."

Dr. M. Faust, Leader, Fruit Laboratory, was the principal speaker at a combined workshop of the Pomology Departments of Cornell at Geneva and Ithaca. For two days the two departments studied the possibility of using a systems approach in their research instead of the traditional one-man-problem solving method. Systems approach research appears to have many benefits in the management of orchards where the problems are long-range and very complex.

Dr. David M. Hershfield, Research Meteorologist in the Hydrograph Laboratory, substituting for Dr. T. C. Byerly, discussed the Department's interests, plans, and programs in the atmospheric sciences at the 53rd Annual Meeting, American Meteorological Society, in St. Petersburg, Florida, January 29-February 1, 1973.

Dr. R. I. Sailer, Chairman of the Insect Identification and Beneficial Insect Introduction Institute, was invited to present two seminar lectures before students and faculty of the Department of Biology, Southern Illinois State University at Carbondale, Illinois. On February 8 he discussed "Interspecific Hybridization as a Factor in Evolution of Species" and presented results of his current research involving hybrids between two species of stink bugs. On February 9 he spoke on biological control as it relates to the pest management concept.

Dr. H. E. Heggstad, Air Pollution Laboratory, presented a paper entitled "Air Pollution Effects on Horticultural Crops" to the Northeast Section, American Society of Horticultural Science, on February 2, Durham, New Hampshire. This was one of two invitational papers in the Symposium entitled "Plant-environment Interactions." Dr. L. H. Allen, Jr., USDA, Cornell University, discussed "Micrometeorological relations to horticultural crop efficiency." A recent report (HortScience, December 1972, "Evidence of injury by ozone in New York vineyards") provides further evidence that oxidant air pollution is a threat to agricultural production in the Northeastern United States.

On February 14, Dr. A. W. Taylor, Agricultural Chemicals Management Laboratory, delivered an address on "Agricultural Chemicals in the Environment" to the Eleventh Annual Meeting of the Maryland Farm and Land Brokers Institute at the University of Maryland.

Dr. J. V. Lagerwerff, Agricultural Chemicals Management Laboratory, was invited to give a seminar on "Heavy Metals in the Environment" on February 23 before the Nuclear and Atmospheric Chemistry group of the Department of Chemistry at the University of Maryland.

Dr. Ashley B. Gurney, Systematic Entomology Laboratory, discussed a field trip made in Nevada and adjacent states during June 1972, at the February 1 meeting of the Entomological Society of Washington. The main purpose of the trip was to observe and record current populations of the "Nevada sage grasshopper," Melanoplus rugglesi. Solitary populations, not adequately reported previously, were found and observed in typical range-land areas of five different states. These thinly distributed colonies, made up of small relatively short-winged individuals which remain in closely localized areas, are in contrast to migratory populations of large, long-winged, highly mobile and gregarious individuals which threatened native range shrubs in the late 1940's and early 1950's.

Honors and Awards

Dr. Curtis W. Sabrosky, Location Leader, Systematic Entomology Laboratory, Washington, D.C., and a Research Entomologist (Taxonomy) with USDA since 1946, has been elected President of the 15th International Congress of Entomology to be held in Washington, D.C., August 19-26, 1976. Dr. Sabrosky was President of the Entomological Society of America in 1969 and of the Society of Systematic Zoology in 1962. He has been an American representative on the Permanent Committee for the International Congresses of Entomology since 1960 and has attended seven previous International Congresses of Entomology, beginning with the VIIth Congress in Berlin in 1938.

Dr. J. L. Hilton, Leader, Pesticide Action Laboratory, AEQI, and Dr. M. N. Christiansen, Leader, Plant Stress Laboratory, PPhI, were recently honored by the Weed Science Society of America. They cooperatively authored a

manuscript entitled "Lipid Contribution to the Selective Action of Trifluralin" which was selected as the outstanding paper published in Weed Science, the Society's official journal, in 1972. Dr. Hilton accepted the Award on February 7 at the national meeting of the Weed Science Society of America.

Eleanor J. Salley, Editorial Clerk at the Animal Parasitology Institute, was presented a cash award by Dr. A. A. Hanson. The award was for development of a highly efficient system of accessioning, lending, and receiving loaned specimens of the National Parasite Collection.

Cooperative Activities

Golden Nematodes Studied: Dr. Morgan Golden, Plant Nematology Laboratory, has been named Chairman of an Ad Hoc Committee to deal with golden nematode viability problems. This committee will have members from Plant Protection and Quarantine Programs and Cornell University. They will seek to devise a more rapid and practical method for determining viability of golden nematode larvae, particularly those subjected to soil fumigation.

Agricultural Chemical Transport by Rainfall Studied: A new model, ACTMO (Agricultural Chemical Transport Model) is in preparation under the leadership of the Hydrograph Laboratory. The USDAHL-70 Model of Watershed Hydrology provides the base for computing the disposition of rainfall to surface runoff, infiltration, plant use, spring return flow, or ground-water recharge. The model zones watersheds according to land capability and computes the influence of plants and cultural practices upon infiltration and water use. Dr. Charles A. Onstad, ARS, North Central Soil Conservation Research Center, Morris, Minnesota, and Dr. Maurice H. Frere, ARS, U.S. Agricultural Water Quality Management Laboratory, Durant, Oklahoma, are to provide subroutines for computing erosion and chemical transport based on the output from the USHL's hydrologic model. This is a rather comprehensive study incorporating a great many disciplines including plant physiology, soil science, hydraulics, mathematics, computer science, engineering, agronomy and meteorology.

Rainfall Runoff Prediction Reported: By special invitation, the Hydrograph Laboratory presented their research program to the 52nd Annual Meeting of the Highway Research Board held at the Sheraton-Park Hotel, Washington, D.C., January 22-26, 1973. The Board is particularly interested in the comprehensive model, USDAHL-70, as a predictor of runoff and in the hydraulics used by the USHL for routing stream flow. The laboratory's hydraulic research is unique in that it routes channel flow independently from the slower floodplain flows thus providing a basis for computing differences in sediment carrying capacities. This approach has never been reported in the literature before.

Nematode Parasites of Black Flies: Dr. W. R. Nickle, Plant Nematology Laboratory, is participating cooperatively on the Canadian Scientific Advisory Group to utilize mermithid nematode parasites of black flies; especially on Simulium damnosum, the vector of onchocerciasis in West Africa. This one million dollar project, supported by the Canadian Government, also

includes black fly control in Newfoundland and Labrador. Our State Department's Bureau of West African Affairs has interest in this project and invited Dr. Nickle to give a talk and to have him sit in on three strategy sessions with State Department and AID officials to improve the U.S. role in this area.

Nematode Parasites of Mosquitoes: Dr. W. R. Nickle, Plant Nematology Laboratory, is cooperating with Dr. J. J. Petersen, Lake Charles, Louisiana, in researching, and developing a new and useful nematode parasite, which kills over 30 species of mosquitoes before they pupate. This nematode can now be reared at a cost of 10¢/million infective stage nematodes. Dr. Nickle was invited recently to speak on the practicality of this biological control agent to the Research & Development Staff of Niagara Chemical Corporation, Middleport, New York. This company has since decided to begin production of the nematode. They hope to have a new biological control product within the year.

Conference on Biochemistry of Aging Held: Dr. James E. Baker, Plant Physiologist in the Postharvest Physiology Laboratory, attended the Gordon Research Conference on Biochemistry of Aging which was held January 21-26 in Santa Barbara, California. Approximately 100 conferees met to discuss the latest findings in biochemistry of aging and senescence. Several new and interesting approaches in the study of DNA repair, protein synthesis, and lipid peroxidation, in relation to aging, were reported.

Rapid Methods for Detecting Objectionable Inclusions in Meat Sought: The Livestock and Meat Marketing Laboratory has developed a cooperative study with the Department of Food Science and Technology, Virginia Polytechnic Institute and State University to develop methodology for detecting undesirable materials such as bone fragments, pieces of large blood vessels, masses of cartilage or tendon, blood clots, hair, pin feathers and scales in meat. The research is funded by the U.S. Army Natick Laboratories.

Putting Research to Work

Research on Meat Distribution Facilities: Ron Smalley, Livestock and Meat Marketing Laboratory, recently completed a study to increase the operating efficiency of a wholesale meat distribution plant in Wilkes-Barre, Pennsylvania. Layouts, work methods, labor and equipment requirements and costs, and estimated construction costs were developed based on an overall plant size to handle the expected volume of business. The proposed refrigerated structure is designed to minimize operational costs by providing improved in-plant efficiencies over the old facility which was severely damaged during last year's devastating flood and must be replaced. The new plant is expected to become an integral part of the Wilkes-Barre, Scranton food distribution center planned by the Food Distribution Research Laboratory, AMRI.

Accelerating Growth of Nursery Stock: In December 1972, Dr. Donald T. Krizek of the Plant Stress Laboratory presented a paper at the Eastern Region Meeting of the International Plant Propagators' Society, in Hartford,

Connecticut. The meeting was attended by more than 250 nurserymen and research workers from the Eastern United States and Canada. His talk was entitled "Accelerated Growth of Birch Plants in Controlled Environments." He reports that certain growers have been able to reduce their production times of nursery stock by one year by growing cuttings at elevated temperatures in accordance with ARS recommendations developed at Beltsville. On January 31, Dr. Krizek gave an invited talk at the Delaware Nursery and Landscape Short Course held at the University of Delaware on a "Head Start Program for Nursery Stock." Approximately 70 growers and researchers were in attendance.

Supermarket Sanitation Procedures Accepted: Mr. L. F. Norwood of the Extension Service and Dr. H. S. Ricker of the Food Distribution Research Laboratory discussed the checklist and recommended procedures for a total store sanitation program with approximately 400 retail store owners and operators at a recent National Association of Retail Grocers of the U.S. workshop in Las Vegas. The procedures were well received by the NARGUS members. They thought the checklist was timely and wish to cooperate in implementing this voluntary sanitation program. NARGUS will publish the checklist and procedures and distribute them to the retail food industry.

Waste Blocks Developed: Research on better ways to use wastes has produced a new type of building material - waste-aggregate concrete blocks. They are made by combining portland cement with sawdust, tree bark, old newspapers, or other readily available waste materials, and they can readily replace all-concrete blocks for many uses. The new blocks are strong and light weight and have excellent insulating properties. They can be dry-stacked into walls, then firmly joined together by the ARS surface-bonding method, in which a thin coat of fiberglass-reinforced mortar is spread over the exposed surfaces. Surface bonding makes the wall moisture proof and protects the interior of the blocks from moisture damage. This new waste-disposal idea was developed by agricultural engineer Jerry O. Newman of the Cooperative Farm Building Plan Exchange and Rural Housing group, ARS.

Swine Pregnancy Test Developed: Cooperative research by Ivan L. Lindahl, ARS, Beltsville, and P. J. Dziuk of the University of Illinois has produced a rapid technique for detecting pregnancy in sows as early as 30 days after breeding. This development appears to be a major breakthrough in animal science technology. No rapid, accurate means of detecting pregnancy in sows under field conditions has previously been available. Since the cost of feeding a sow is approximately 30 cents a day, detection and culling of barren sows 30 days after breeding can save \$18, or 60 days' feed costs, for each non-pregnant sow. The new detection technique, based on the use of reflection-echo ultrasound, is an outgrowth of pioneering research by Lindahl, who was the first researcher in the world to use ultrasound for pregnancy tests in livestock. Current reports from the Midwest indicate that an increasing number of researchers, veterinarians, and swine producers are adopting this test.

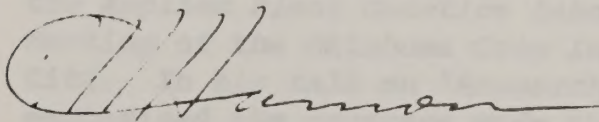
High Priority Given "Project: Consumer Concern": At a recent meeting of the Northeastern Extension Marketing Committee, Dr. H. S. Ricker of the Food Distribution Research Laboratory discussed the USDA NARGUS (National Association of Retail Grocers of the U.S.) "Project" Consumer Concern." This project combines a total store sanitation program with a consumer education program on proper handling methods for food products for quality assurance. The State Extension Specialists from the Northeastern Region will give this project a high priority in future marketing efforts.

Controlled Environment Research Discussed: Dr. Donald T. Krizek of the Plant Stress Laboratory represented the United States at the International Society for Horticultural Science Symposium on "Basic Problems of Protected Vegetable Cultivation: which was held in Hanover, Germany, September 13-16, 1972. While there he presented a paper entitled "Maximizing growth of vegetable seedlings in controlled environments at elevated temperature, light, and CO₂" and attended the ISHS Executive Council Meeting as one of three U.S. delegates. While in Europe, Dr. Krizek visited phytotrons and controlled-environment facilities in Germany, France, England, and The Netherlands and also gave a seminar at the Glasshouse Crops Research Institute in Littlehampton, England.

Foreign Visitors

On November 2, 1972, Elmer E. Jones, Physical Control Laboratory, presented a seminar for Morizo Ibuka, Irrigation, Drainage and Reclamation Engineer, Farmland Development Department, Hokkaido Prefectural Government, Sapporo, Japan and a party of five including an interpreter. A prepared slide set with narrative on Automatic Hydraulic Waste Removal that the interpreter could translate directly was of great value. Factors affecting water utilization efficiency in livestock sanitation and system reliability were also discussed.

Miss Ida Blok, Plant Pathologist, Wageningen, The Netherlands, visited the Soilborne Diseases laboratory, January 26 to discuss our research on root-infecting microorganisms. Another visitor to the Soilborne Diseases Laboratory from The Netherlands was Dr. J. E. V. Van Zanten, Director of Research of Sluis and Groot B.V.--Enkhuizen, Holland. Dr. Van Zanten visited George C. Papavizas, Leader of the Laboratory, to discuss problems of vegetable resistance to soilborne plant pathogens.



A. A. Hanson
Area Director

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTHEASTERN REGION
AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705

NOTES FROM THE AREA DIRECTOR

No. 11

March 15, 1973

Employee Activities

Market Quality Instrumentation: Dr. E. E. Finney, Chairman, Agricultural Marketing Research Institute, presented a graduate seminar March 15 at Howard University. The title of the seminar was "Instrumentation for evaluating the quality of foods and other agricultural products."

Invitation to Chair Committee: Dr. Richard H. Foote, Leader, Systematic Entomology Laboratory, has been invited to chair an ad-hoc committee on documentation for biological and integrated control, established as part of the program of the International Organization for Biological Control. Drs. P. A. Rauch and E. I. Schlinger, both of the University of California at Berkeley, and Dr. R. Lagiere, IRCT, Paris, France, are the other members.

Nitrogen and Agriculture: Dr. George Stanford, Plant Nutrition Laboratory, presented a seminar February 14, 1973, before the Johns Hopkins Water Sciences and Management Seminar, conducted within the Department of Geography and Environmental Engineering. The topic of the seminar was "Nitrogen: Rationale for Optimum Use in Agriculture."

Re-elected to Council: Dr. Curtis W. Sabrosky, Systematic Entomology Laboratory, has been re-elected to the five-man Council of the International Commission on Zoological Nomenclature. He was first elected to the Council in 1972 and has served as a Commissioner since 1963.

Pesticide Committee: Dr. Louis Feinstein, Chemicals Coordination Laboratory, has been made a member of the Armed Forces Pest Control Board, Department of Defense, Pesticide Committee, effective February 2, 1973.

Alfalfa Weevil Research: Mr. Roger Ratcliffe, Research Entomologist in the Applied Plant Genetics Laboratory, was invited to speak at the Annual Meeting of the Oklahoma Crop Improvement Association February 9 in Oklahoma City. In his talk on "Research in Alfalfa Weevil Control," Mr. Ratcliffe emphasized the progress made through USDA research on development of plant resistance, biological control, and various types of chemical control, including most recent studies to investigate the potential of synthetic insect juvenile hormones in suppressing this pest.

Weed Science Society of America: Dr. E. A. Woolson and Dr. P. C. Kearney, Pesticide Degradation Laboratory, presented papers at the annual meeting of the Weed Science Society of America held in Atlanta, Georgia, February 6-8. The papers dealt with behavior of arsenic residues in soil and vegetable crop response to arsenic.

Legumes in Latin America: Dr. J. P. Meiners, Chairman, Plant Protection Institute, spent the last week of February at Cali, Colombia, where he participated in a "Seminar on the Potential of Field Beans and Other Food Legumes in Latin America." This Seminar was sponsored by the International Center for Tropical Agriculture (Centro Internacional de Agricultura Tropical) (CIAT) and brought together over 100 scientists from the Latin and South American countries and the United States to assist in establishing a program to help research and educational institutions in Latin America increase productivity and utilization of field beans.

Careers in Parasitology: Dr. Ronald Fayer of the Animal Parasitology Institute spoke to students and faculty at Delaware State College in Dover on February 27 with regard to careers in Parasitology as part of the cooperative program between the Agricultural Research Center and the Center for Agriculture and Natural Resources at the Dover Institution.

Editorial Board Appointment: Dr. J. R. Lichtenfels, Zoologist at the Animal Parasitology Institute, has been appointed to the Editorial Board of the Journal of Parasitology.

Honors and Awards

Outstanding Performance: Mrs. Lucy Gentry, Laboratory Aide at the Animal Parasitology Institute, was presented a cash award by Dr. A. A. Hanson. The award was for outstanding performance of her duties in Avian Coccidiosis research.

Safety Suggestion Award: Mr. Richard Ellis, Biological Laboratory Technician, was presented a cash award and a certificate of appreciation by Dr. A. A. Hanson. The award was for a safety suggestion concerning automobile traffic patterns between laboratories at the Animal Parasitology Institute.

Cooperative Activities

Chemicals in the Environment: Dr. A. R. Isensee, Pesticide Degradation Laboratory, served as a panel member at the Working Conference on Principles of Protocols for Evaluating Chemicals in the Environment, sponsored by the National Academy of Sciences and held in San Antonio, Texas, February 11-16. The conference was held to develop guidelines for use by EPA in fulfilling their responsibility to the "Toxic Substances Act" which is anticipated to pass Congress this year.

Biological Pest Control: Dr. Robert M. Faust, Insect Pathology Laboratory, acted as a consultant and advisor to Drs. W. Watanabe and H. Boyer of the Rohm and Haas Company, Spring House, Pennsylvania, February 13 and to Drs. B. Lovell, R. Kupelian, and R. Wayne of the American Cyanamid Company, Princeton, New Jersey, February 16. The two companies are instigating the

production of Bacillus thuringiensis on a commercial basis for control of Lepidopterous pests as an alternative method to chemical insecticides. Dr. Faust's research is involved in the chemical identification and molecular mode of action of the toxin produced in hopes of chemical synthesis commercially and increasing the spectrum of susceptible insects.

Putting Research to Work

Cheese Connoisseurs All: As part of the Nutrition Institute's plan to familiarize its personnel with the research in its other laboratories, the Dairy Foods Nutrition Laboratory recently held an open house. Since cheese research is one of the areas of concern of the DFNL, the attendees were asked to rank five samples of Cheddar cheese according to its age. They were told that the cheese samples were 1, 3, 6, 7 and 12 months of age. Forty-eight persons completed the form. To the surprise of some who think the normal consumer has no sense of taste 75% of the people correctly identified the 12-month old cheese, 65% the 1-month old cheese, and 40% the 3-month old cheese. An even more tangible result was the discussion which followed suggesting many areas for more formal cooperation between the Laboratories--and that was what the open house was really all about.

Beef Cattle Producers Aided: Five herds of beef cattle, in as many States, have been selected as units to demonstrate how morbidity and mortality losses from anaplasmosis can be reduced using new methods of control developed at Animal Parasitology Institute. Cattle infected with anaplasmosis are detected by applying the rapid card agglutination test, followed by two treatments of imidocarb (Burroughs Wellcome Co.) to eliminate the infection. The cattle are then retested after nine months to compare the decrease in prevalence after treatment with that before treatment. Preliminary indications are that considerable success is being obtained in these study herds.

Visitors

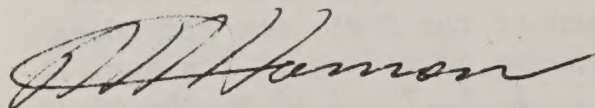
Diets Studied: Dr. Constantine Chlouverakis, Associate Professor of Medicine, State University of New York at Buffalo and Director of Obesity Unit, E. J. Meyer Memorial Hospital, visited the Nutrition Institute on February 20 as a guest of the Carbohydrate Nutrition Laboratory. He presented a seminar entitled "The mechanism of hypertriglyceridemia in the streptozotocin diabetic rat and the effects of diet on it." In this study, animals were given insulin and either a high- or low-fat diet. Animals grew at a normal rate, even for a short time after insulin treatment was ended. Serum triglyceride was then observed to rise sharply, due to an impairment in its clearance from the blood.

Fellowship: Hidejiro Shibayama of the Weed Control Laboratory, Kyushu Agricultural Experiment Station, Ministry of Agriculture and Forestry, Japan, has joined the Plant Hormone and Regulators Laboratory on a one-year fellowship. Mr. Shibayama will be working with Dr. J. F. Worley on the physiological responses of plants to growth regulators.

Parasitology Visitors: Dr. T. K. Jeffers, Hess and Clark Company, and Dr. Ray Williams, May and Baker Research Laboratories, Ongar, England, were 2-day visitors to the Animal Parasitology Institute. They discussed histomoniasis with Dr. Lund and coccidiosis with Drs. Foran, Fayer, McLoughlin and Vetterling.

General

Retirement Annuity Figures: Blanche Resnicoff reports that her office will be glad to help anyone determine their retirement annuity figures to assist in planning for retirement.



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NOTES FROM THE AREA DIRECTOR

No. 12

April 5, 1973

Employee Activities

Dinner Dance Held: The First Annual Agricultural Research Center Dinner Dance was held March 17, 1973, at the Greenbelt American Legion.

After socializing and eating a delicious roast beef meal, everyone enjoyed listening and dancing to the music provided by the Capitol City Band. An extra bonus was added at break-time when John Sauls and friends generously entertained us with their Real Picin' and Grinin'. Free door prizes were given away plus one person per table got to take home a potted plant. A good time was had by all!!

Executive Development Seminar: Dr. G. C. Papavizas, Leader of the Soil-borne Diseases Laboratory, PPI, was one of 50 USDA employees that attended the Seminar of Executive Development at Front Royal, Virginia March 11-16. This seminar is an interagency management development program (a) to consider the broad areas of agricultural involvement and (b) to inspire creative thinking in modern agricultural problems and imaginative approaches to dealing with them.

Seminars Presented at Purdue and Wisconsin: Dr. Philip C. Kearney, Pesticide Degradation Laboratory, presented a seminar, "Microbial Degradation of Pesticides in Soils," at a seminar series on Fate of Pesticides in the Environment at Purdue University on March 19. He also presented a seminar entitled "Significance of Arsenic in the Environment" before the Environmental Toxicology Group at the University of Wisconsin, Madison, March 20.

Foreign Visit: Dr. T. O. Diener, Plant Virologist, presented a lecture entitled "The similarities between the scrapie agent and the agent of the potato spindle tuber disease" at a symposium on "Slow virus infections of the central nervous system" during the annual meeting of the Finnish Medical Associations in Helsinki, Finland, January 8-10. After the meeting, Dr. Diener worked for three weeks with Dr. Th. Koller and J. M. Sogo, electron microscopists at the Swiss Federal Institute of Technology, Zurich, on the electron microscopy of the potato spindle tuber viroid. In addition he lectured at the Institute of Molecular Biology, University of Zurich; at the Institut Botanique, Universite Louis Pasteur, Strasbourg, France; and at the University of Bordeaux, France.

Well Water Problems Discussed: On February 21-22, Elmer E. Jones, Agricultural Engineer, Farmstead Water Systems Research, Physical Control Laboratory, was the major instructor for a Water Supply Short Course sponsored by the Division of Milk Control, Environmental Health Administration, Maryland Department of Health and Mental Hygiene.

Dairy Genetics Discussed in Michigan: Dr. H. Duane Norman of the Animal Improvement Programs Laboratory, presented "Current USDA Plans for Sire Summaries" at the 58th Farmers' Week, Michigan State University.

Service on Terminology Committee: Dr. John C. Brown, Plant Stress Laboratory, has been asked to serve on the S801-74, Terminology Committee on Soil Fertility and Plant Nutrition for the Soil Science Society of America.

Foreign Travel: Dr. Raymon E. Webb was in India and Pakistan, February 8-March 11 reviewing PL 480 cooperative research projects (India) and providing technical assistance in developing a potato research program for Pakistan sponsored, in part, by the PL 480 program.

Honors and Awards

Marketing Specialist Honored: Clarence E. Harris, Dairy and Poultry Products Marketing Laboratory, AMRI, was recently received into membership in Phi Sigma, a national honor society. Membership is based upon scholastic standing. The Society is devoted to the promotion of research in biological sciences. The local chapter meets each month at the University of Maryland.

Nutrient Talk Presented in Michigan: On March 13, Dr. C. E. Bodwell, Protein Nutrition Laboratory, NI, presented an invited talk on "Effect of Preparation Procedures on Nutrient Retention in Institutional Foods" at a Highlights in Food Science symposium on "Quality and Nutrient Retention in Processed Fruits and Vegetables" held at Michigan State University, East Lansing, Michigan. The symposium, sponsored by the MSU Department of Food Science and Human Nutrition, was attended by representatives from industry, and government agencies as well as university staff and students.

Cooperative Activities

Communicating ARS Research: Dr. Donald D. Kaufman, Pesticide Degradation Laboratory, AEQI, presented a seminar entitled "Degradation and Fate of Some Environmental Pollutants" to students of the Agricultural and Natural Resources Department of Delaware State College. This lecture was a part of the cooperative program between ARS and Delaware State College which has been coordinated by Dr. Richard E. Patty, our USDA Liaison Officer to D.S.C.

Communicating ARS Research: Dr. R. E. Hardenburg, Leader, Horticultural Crops Marketing Laboratory, gave an illustrated talk on postharvest horticulture to a freshman class majoring in agriculture at Delaware State College, Dover, Delaware on March 27. There was also time for discussion with some faculty members and the Chairman of the Department of Agriculture and Natural Resources, Mr. Ulysses S. Washington.

Dairy Herd Improvement Association Meets: Drs. James Smith, Frank Dickinson, and Paul Thompson participated in the National DHIA (Dairy Herd Improvement Association) convention in Salt Lake City, Utah, March 21-23. Drs. Thompson and Smith are the ARS representatives on the DHI Coordinating Group's "Technical Committee on Testing, Weighing, and Sampling Devices." All ARS representatives participated in the National DHI convention through

discussion and providing technical information to the dairymen. Dr. Dean Plowman, the Chairman of the Coordinating Group, and Area Director, Logan, Utah, was the major invited speaker. Drs. Smith and Dickinson participated in the DHI Coordinating Group by providing technical information relating to the operation of the sire summary and committee assignments.

ARS Represented on Food Safety Study: Dr. A. W. Kotula, Leader, Livestock and Meat Marketing Laboratory, has been appointed to represent ARS on an ad hoc USDA group on Water Quality and Food Safety. This group will develop a departmental position with guidelines concerning the recycling of waste water in food processing plants as it relates to food safety.

Wilkes-Barre and Scranton Leaders Take Steps to Implement ARS Food Center Plan: Meetings concerning the ARS proposed \$14 million wholesale food distribution center for the Wilkes-Barre and Scranton, Pa., area were held recently in Scranton to review the proposal, appraise recent developments, and outline an action program of implementation. K. H. Brasfield and Richard K. Overheim of the Food Distribution Research Laboratory, AMRI, participated in the meetings at the request of the Wilkes-Barre/Scranton Food Distribution Center Association, a local industry organization created to carry out the plan. Local county commissioners, city mayors, councilmen, food wholesalers, and chambers of commerce, as well as members of the Economic Development Council of Northeastern Pennsylvania attended. The State Director of the Farmers Home Administration was also present since the FHA is considering providing financial assistance to the project. The published report of the study, MRR 987, "Food Distribution Facilities for Wilkes-Barre and Scranton, Pennsylvania," was formally released at the meetings.

Putting Research to Work

Research Program Recommended: Dr. Philip C. Kearney, Pesticide Degradation Laboratory, attended a two-day meeting, February 22-23, at the Air Force Academy in Colorado Springs, Colorado, as a consultant to the U.S. Air Force Scientific Advisory Board on the disposal of a biologically active chemical. The panel recommended a detailed research program for the Air Force to initiate for the possible soil disposal of 24 million pounds of the chemical at a military test area.

Faneuil Hall Area in Boston to be Restored: The historic Faneuil Hall-Quincy Market area of downtown Boston will be restored as a retail, market, restaurant, and office center. This area served as the City's hub of wholesale food distribution from before the American Revolution until around 1970 when new wholesale food distribution facilities were constructed in Everett-Chelsea and South Boston. ARS conducted the research studies (MRR 732) from which the new facilities were planned and constructed. Mayor Kevin White described the project as the "most important restoration in the city's history." The Rouse Company, developer of Columbia, Maryland, has been chosen to restore the old market area.

National Conservation Tillage Conference: C. S. Britt of the Director's Office chaired the Program Committee of a National Conservation Tillage Conference March 28-30 at Des Moines, Iowa. Dr. George Stanford, Plant Nutrition Laboratory, presented an invited paper on "Nutrient Availability." A total of 19 ARS scientists participated in the meeting and over 40 ARS scientists attended.

Agricultural Chemical Transport Model Studied: More than 30 ARS soil, water, and plant scientists from over the Nation attended a conference at Beltsville on March 6-8 to review progress on the development of an agricultural chemical transport model (ACTMO). The project, led by the Hydrograph Laboratory, is aimed toward synthesizing a comprehensive mathematical model to account for the disposition of water, farm chemicals, wastes and sediment on agricultural watersheds.

Visitors

Maid of Cotton Visits Beltsville: On March 12 Miss Debra Ploch, the Maid of Cotton, and her entourage visited the Agricultural Research Center. During the course of this visit she observed most of the research projects relating to cotton. The lucky scientists involved were as follows: Dr. Harry R. Carns chaired the planning of the program and joined Dr. A. A. Hanson in welcoming Debra to the Research Center.

Dr. N. M. Christianson presented the work of the Plant Stress Laboratory; Dr. G. E. Carlson and Bill Bailey showed the work of the Light and Plant Growth Laboratory; Dr. W. A. Gentner represented the Pesticide Action Laboratory; Drs. L. L. Slyter, P. B. Marsh and M. E. Simpson showed the work of the Nutritional Microbiology Laboratory; Dr. D. G. McHaffey represented the Insect Chemosterilant Laboratory (We do have cotton Boll Weevils at Beltsville); and Dr. J. W. Smith and N. W. Hooven showed her the Dairy Herd. Debra seemed to enjoy her visit very much.

English visitor: The Ruminant Nutrition Laboratory was the host, March 13-14, for Dr. C. C. Balch, Head of the Feeding and Metabolism Department of the National Institute for Research in Dairying, Shinfield, Reading, England. Dr. Balch presented a seminar describing their research program and visited with scientists concerning research on energy metabolism, physiology of digestion, and other research projects.

German Animal Nutrition Institute Visits Beltsville: Nineteen scientists from the Animal Nutrition Institute in Weihenstephan, West Germany, led by their Director, Professor M. Kirchgessner, came to the United States in order to visit the Nutrition Institute in Beltsville and the Department of Animal Science at Cornell University, Ithaca, New York. March 25, scientists of the Nutrition Institute took them to their respective homes in order to get acquainted with the practical aspects of American nutrition. Monday was spent with a visit to the Beltsville Area Office and the various laboratories of the Institute. During the afternoon the visitors spent the available time in the laboratories closest related to their own interest. Tuesday morning was spent in our Energy Metabolism Laboratory after which they were given a briefing on the research activities of the Animal Physiology and Genetics Institute. The

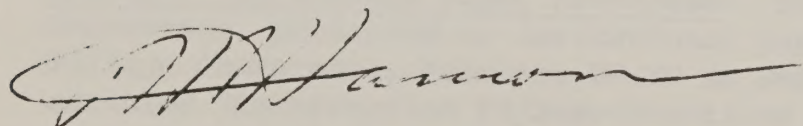
afternoon was reserved for a visit at two Maryland dairy farms. We were very gratified by this visit and found our discussions with the visitors stimulating and instructive. We are sure that our guests felt the same way.

Visiting Scientist: Dr. Albert Ilemobade, D.V.M., lecturer in Veterinary Parasitology at the College of Veterinary Medicine, Ahmadu Bello University, Zaria, Northern Nigeria, is spending three months as a visiting scientist at the Haemoprotzoan Diseases Laboratory, API. Dr. Ilemobade's main interest is blood protozoan parasites of domestic animals.

Russian Visitors: The Instrumentation Research Laboratory was visited by B. Runov, Minister of Agriculture, Moscow Department of Agriculture, and A. Ksnygin, Agricultural Councilor for the Russian Embassy in Washington, on March 14 to review current work on the development of instruments to measure the quality of food products.

Dr. Victor F. Lishchenko, Agricultural Attache of the USSR, visited the Equine Piroplasmiasis Project on March 15 to discuss our research and to obtain reprints to be sent to Russian workers in the field. The Russians are planning to produce antigen for use in complement-fixation tests so that international movement of their horses can be facilitated.

Industry Visitors: The Instrumentation Research Laboratory was host to visitors from the Giant Corporation March 26. Included were Esther Peterson, Consumer Advisor to the President, Morris Hamberger, Vice President, Meat and Seafood Operations, R. C. Wittenberg, Divisional Merchandise Manager, and Henry Strong, Manager of Meat Marketing. Esther Peterson was particularly interested in the development of instruments to measure the interior quality of fruits and vegetables and the rapid measurement of fat content of meat. We demonstrated our newly developed instrument which measures fat content of meat. Also demonstrated was our newly developed instrument which measures fat content of ground beef by analyzing the reflectance spectra in the 0.92- to 0.95-micron region. This instrument is expected to have wide application in grocery stores, because it gives an instant fat reading to within 1% on consumer size packages of ground beef.



A. A. Hanson
Area Director

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTHEASTERN REGION
AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705

NOTES FROM THE AREA DIRECTOR

No. 13

April 19, 1973

Employee Activities

American Chemistry Society Meeting: Dr. Meyer Schwarz, Biologically Active Natural Products Laboratory, participated in the National Meeting of the American Chemistry Society in Dallas, Texas, April 9-12. He also attended a cooperative work conference on insect hormones at the USDA College Station, Texas laboratories.

Pollution Research: Drs. H. E. Heggstad and R. K. Howell, Air Pollution Laboratory, participated in the Fifth Annual Air Pollution Workshop April 3-5, which was held at Boyce Thompson Institute for Plant Research, Yonkers, New York. All aspects of pollutant injury to vegetation, including methods for reducing injury, were discussed. Dr. Heggstad will be co-chairman of the next workshop which will be held in the Western United States at the EPA Center at Las Vegas, Nevada.

Speaker at North Central Animal Breeders' Conference: Dr. F. N. Dickinson, Leader, Animal Improvement Programs Laboratory, was invited to speak to the North Central Animal Breeders' Conference, Milwaukee, Wisconsin, April 3-4 on the topic "Effects of Proposed Changes in USDA Sire Summaries." Approximately 175 representatives of the Artificial Insemination Industry and Land Grant Universities involved in dairy cattle breeding research were in attendance. While at this conference, Dr. Dickinson was also invited to a meeting of the Board of Directors of the National Association of Animal Breeders to discuss industry arrangements for the forthcoming USDA-DHIA preliminary sire summary.

Chairman Appointment: Dr. David M. Hershfield, Hydrograph Laboratory, has been named chairman of an ad-hoc panel of the Interdepartmental Committee for Atmospheric Sciences, to examine certain aspects of global climatic change.

Conservation Tillage Paper Presented: Dr. George Stanford, Plant Nutrition Laboratory, presented an invitational paper before the National Conservation Tillage Conference, February 28-30 in Des Moines, Iowa. The paper was entitled "Conservation Tillage Practices and Nutrient Availability" with co-authors O. L. Bennett and J. E. Power, both of ARS.

Television Appearance: On April 7 and 10, Dr. R. J. Davey, Nutrition Institute, appeared on "Across the Fence." The discussion with Mr. Layne Beaty of the Office of Information centered on factors influencing the production of lean meat with particular emphasis on pork production.

Invitational Paper Presented: Dr. Paul B. Marsh, Nutritional Microbiology Laboratory, presented an invitational paper at a Conference of Collaborators from Southern Agricultural Experiment Stations held at New Orleans April 2-3. The paper was prepared in cooperation with Dr. Marion E. Simpson, also of this Laboratory, and dealt with field factors which influence the occurrence of aflatoxins in cotton seeds at harvest.

Plant Research Yields Model for Medicine: T. O. Diener, Plant Virology Laboratory, presented an invitational lecture entitled "The similarities between the scrapie agent and the agent of the potato spindle tuber disease" at a symposium on "Slow Virus Infections of the Central Nervous System" during the annual meeting of the Finnish Medical Associations in Helsinki, Finland, January 8-10. After the meeting Dr. Diener worked for three weeks with Drs. Th. Koller and J. M. Sogo, electron microscopists at the Swiss Federal Institute of Technology, Zurich, on the electron microscopy of the potato spindle tuber viroid. In addition, he lectured at the Institute of Molecular Biology, University of Zurich; at the Institut Botanique, Universite Louis Pasteur, Strasbourg, France; and at the University of Bordeaux, France.

Parasitology Research: Dr. H. Herlich, Animal Parasitology Institute, was a participant in a symposium on "The Future of Biological Control in Parasitology" at the annual meeting of the Coordinating Committee on Internal Parasites of Domestic Animals in the Southern States. At the meeting held in Athens, Georgia, April 4, Dr. Herlich spoke on "Explorations into immunization as a means of control for helminth parasites." Mr. R. A. Knight also attended and participated in a round table discussion of plans for next year's work.

Insect Control Methods: Dr. Nobel Wakabayashi, Biologically Active Natural Products Laboratory, addressed students and faculty at a "Science Sleep-in" at Waterloo Middle School, Waterloo, Maryland on April 6 on the subject "Newer Methods of Insect Control."

Nutrition on the Airwaves: Dr. Orville A. Levander, Vitamin and Mineral Nutrition Laboratory, recently appeared on the WAMU-FM radio talk program called "The Home Show" along with two other nutritionists from the D.C. area. Topics discussed included vitamin E, vitamin C, the nutrition labeling problem, and the general difficulties families face in attempting to achieve good nutrition in light of rapidly changing food consumption habits and family living patterns. Dr. Levander reports that he and the other two nutrition experts on the panel were somewhat amazed at the level of sophistication of many of the questions regarding nutrition phoned in by the audience.

Civil Service Standards Committee Member: Dr. John Alford, Dairy Foods Nutrition Laboratory, has been appointed as a member of the Civil Service Standards Committee of the American Academy of Microbiology to serve through 1976. This committee is composed of five members representing various branches of government. Its function is to consult with the Civil Service Commission on matters of concern to Microbiologists, particularly in regard to their professional qualifications which relate

to positions in the federal service.

Cooperative Activities

Experimental Van Container to be Equipped with Air Cushioned Ride: A memorandum of understanding has been signed with the Neway Division of Lead-Siegler, Inc. under the terms of which that firm will loan to the Transportation & Packaging Research Laboratory an air suspension system-equipped bogie (a tandem axle assembly for truck trailers) which can be used interchangeably with the conventional metal spring-equipped bogie with the Laboratory's experimental refrigerated van container. The loan of this equipment will make it possible for the Laboratory scientists to evaluate the value of the air cushion ride in helping to reduce physical damage to packages and to fragile, easily bruised products during transport by highway and railroad piggyback service. The interchangeable bogie makes it possible to use the same vehicle for each shipping experiment.

Handbook Preparation: Dr. H. R. Carns, Chairman, Plant Physiology Institute, Dr. Donald T. Krizek, Plant Stress Laboratory, and Dr. Gerald E. Carlson and Mr. Herschel H. Klueter, Light and Plant Growth Laboratory, served as panel members at Department of Transportation (DOT) Workshop held at the University of Florida, in Gainesville on March 7-9. The purpose of the meeting was to prepare a preliminary draft of Volume V., "The Biological Implications of Climatic Change", one of six such volumes to be prepared on the DOT Climatic Impact Assessment Program (CIAP), and to coordinate research planning on various experimental programs underway. These handbooks are expected to provide the data base for analyses to be prepared in 1974 by NAS/NAE Summer Study on the Effects of Pollution of the Stratosphere. Although not present at the workshop, Dr. M. N. Christiansen, Plant Stress Laboratory, and Dr. R. H. Hart, Light and Plant Growth Laboratory, are also cooperating in studies at ARC on the possible effects on cultivated plants of enhanced ultraviolet radiation. In addition, Dr. Carns is responsible for ARS extramural research contracts with the University of Florida and Utah State University concerned with the same subject.

Flower Packaging and Transport Project Underway: Work to compare the economic and physical feasibility of shipping cut flowers in the newly-developed LD-3 refrigerated air cargo container carried on the underside of the giant 747 jet airliner with the conventional method of shipping them in corrugated fiberboard boxes in the non-refrigerated cargo holds of the planes has just begun. This research is a cooperative undertaking of the Transportation and Packaging Research Laboratory and the Fresno, California Horticultural Crops Research Station of the Western Region of ARS.

New Approach to Virus Identification: On February 16, Dr. J. M. Kaper, Plant Virology Laboratory, was principal speaker at the Biochemistry Colloquium sponsored by the Departments of Biochemistry and Biophysics of the University of Wisconsin at Madison, at the special request of Dr. Paul Kaesberg, Chairman of the Biophysics Department. This lecture was essentially a repeat of the one Dr. Kaper delivered as a guest lecturer

at a symposium of the Federation of European Biochemical Societies in Amsterdam, The Netherlands, last August. Dr. Kaesberg had attended this lecture and wished to expose the staff and student audience at the University of Wisconsin to the contents of the lecture, which proposes and gives an experimental basis for a new approach for classification of simple viruses according to their stabilizing interactions. This new systematic approach has attracted considerable attention among experimental virologists concerned with identification of new viruses.

Putting Research to Work

FDRL Assistance and Recommendation Pay Off: Produce growers of western North Carolina are benefiting today from a marketing research study and recommendation made over a year ago by the present Food Distribution Research Laboratory. Feasibility of relocating the Winston-Salem produce market from downtown out onto the Dixie-Classic Fairgrounds was then affirmatively determined. Plans were developed for housing it in a dual-purpose facility which would also serve as an exhibit building. It was recommended that contingency arrangements be made for implementing the proposal on short notice. Thanks to the study and recommendation, City and Fair officials were able to activate the project under emergency conditions last week and expect to have the facility under contract in 30 days.

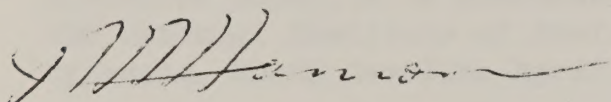
Lettuce Loading Instructive Chart for Department of Defense: At the request of the Defense Personnel Supply Center, the Transportation and Packaging Research Laboratory is developing a large, instructive wall chart showing how to lay out and use the modified bonded-block loading pattern developed by the Laboratory scientists for overseas shipments of lettuce. The chart is intended for the guidance of inspectors and field supervisors of the DPSC and for loading crews at lettuce packing houses and in van container port areas.

Visitors

Fruit Handling Methods Discussed: Mr. Jerry Skrzyszowski, Manager of a frozen fruit and vegetable processing plant in Bialystok, Poland, met with R. E. Hardenburg and John C. Bouma, Agricultural Marketing Research Institute, on March 29 concerning physical handling of fruit from the field to the processing plant. Several alternative handling methods were discussed that would reduce handling costs, particularly in the area of unitized handling. Mr. Skrzyszowski will be visiting the vegetable and fruit processing facilities and field production practices in Maryland through June and will be guided by the staff at the University of Maryland.

Production of Antigens Discussed: Dr. Don Peetz of the Biological Reagents Section, APHIS, NADL, visited the Animal Parasitology Institute on March 28 to learn about production of antigens used in the complement-fixation test for the diagnosis of equine piroplasmiasis.

Transportation and Packaging Research Laboratory was host to a number of visitors including Dr. James R. McCaul, Economic Consultant, McLean, Virginia. Dr. McCaul and Mr. Breakiron discussed a proposed contract with U.S. Maritime Administration on measuring time and movement profiles for intermodal overseas shipments of U.S. agricultural perishables. Also included was Mr. Herbert R. Rupp, Special Products Account Executive, Motorola Communications and Electronics, Inc., Schaumburg, Illinois, who discussed remote monitoring of operation of refrigeration units on and interior environmental conditions in railroad refrigerator cars, refrigerated trailers and van containers.

A handwritten signature in dark ink, appearing to read 'A. A. Hanson', with a long, sweeping horizontal line extending to the right.

A. A. Hanson
Area Director

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NOTES FROM THE AREA DIRECTOR

No. 14

May 10, 1973

Employee Activities

Drs. J. R. Plimmer and E. A. Woolson, Pesticide Degradation Laboratory, presented papers at a conference on Dibenzo-dioxins and Dibenzo-furans at the National Institute of Environmental and Health Sciences, Research Triangle, North Carolina April 2-3.

Nathan Green, Biologically Active Natural Products Laboratory, presented the work of ARS on "Chemical Insect Attractants" before students and other visitors at the Youth Science Fair, Agricultural Research Center West, on April 25.

Dr. Manya Stoetzel, newly appointed Presidential Intern in the Systematic Entomology Laboratory, participated in an overnight nature tour conducted for fifth graders on April 30 by the Prince Georges County School System at the Orne Center near Brandywine, Maryland.

Mr. Ted Spilman, Systematic Entomology Laboratory, met with a group of Montgomery County School System 6th graders on April 10 at Camp Mar Lu Ridge, Maryland, to point out where insects are found and the roles they play in maintaining an ecological balance.

On April 12, Dr. Robert S. Isenstein, Non-Ruminant Helminthic Diseases Laboratory, visited an area in southern New Jersey where swine are fed cooked garbage, in an effort to find a better source of trichinous hogs for use in field testing soluble antigen, fluorescent-antibody, technique, for the detection of porcine trichiniasis.

Dr. C. B. England and Dr. Chin L. Yen, Hydrograph Laboratory, were speakers at the national meetings of the American Geophysical Union, held at the Sheraton-Park Hotel, Washington, D.C., April 16-20. Appearing before the Section of Hydrology, Dr. England discussed "A Watershed Model Applied to Lysimeters" and Dr. Yen presented "Routing in Floodplain Channels," co-authored by George H. Comer and Heggie H. Holtan.

Charles F. Stewart, Dairy Marketing Specialist of the Dairy and Poultry Products Marketing Laboratory, presented a paper in March at the annual Oklahoma State Dairy Industry Conference in Stillwater, Oklahoma. The paper, "Layout, Design, and Operational Efficiency of Dairy Processing Plants", included a discussion of the fundamental objectives that must be met in developing an efficient plant layout and how they could be applied to an existing facility or a new one. For illustration purposes, a new dairy processing plant layout was developed and discussed before the audience using a visual aid. The aid consisted of; a black flannel backdrop cloth with composition paper templates of various colors representing each individual plant area, and Velcro tabs for attaching the templates to the

cloth. This type of presentation was very picturesque and received a very favorable reaction from the audience.

Honors and Awards

Dr. Cecil H. Wadleigh has been elected to the National Academy of Sciences. Dr. Wadleigh served as Director of the former Soil and Water Conservation Research Division from 1955 through 1970; and was named Science Advisor to the ARS Administrator in 1971. Since his retirement in December 1971, he has been a collaborator with the USDA Hydrograph Laboratory.

Dr. Phil Baum, Vegetables Laboratory, has been elected a member of the Maryland University Chapter of the Honor Society Phi Sigma for his devotion to the promotion of research in the biological sciences.

Martin Jacobson, Biologically Active Natural Products Laboratory, was chosen to present the 1973 Annual McGregory Lecture in Chemistry at Colgate University, Hamilton, New York, on April 26. The presentation, "Recent Progress in the Chemistry and Biological Activity of the Insect Sex Pheromones," was attended by University staff and students, as well as members of the Syracuse Section of the American Chemical Society.

Dr. Donald T. Krizek, Plant Physiology Institute, and nine other members of the Growth Chamber Committee of the American Society for Horticultural Science were recently awarded a \$10,000 grant by the National Science Foundation to support base-line growth studies that have been under development by this group for the past three years. The funds will be utilized primarily to obtain a standard instrument package that will be exchanged among committee members to assure uniform measurement of the environment in growth chambers in the respective laboratories.

Cooperative Activities

Growth Chamber Workshop Held: Dr. Donald T. Krizek, Plant Stress Laboratory, served as a panel member at the recent Growth Chamber Handbook Workshop sponsored by the Growth Chamber Committee of the American Society for Horticultural Science, held at Cornell University in Ithaca, New York, April 4-6. The main task of the workshop was to review the first draft of the Growth Chamber Handbook being prepared by this Committee.

Assessment of Transport Technology: The first As-Tech (an acronym for assessment of technology) Conference on Overseas Transport of Agricultural Perishables organized and sponsored by the U.S. Maritime Administration in the Department of Commerce Auditorium in Washington, owed a large part of its success to inputs from the USDA. About half of the speakers on the program were from the ARS and the Foreign Agricultural Service. Robert F. Guilfooy, Mechanical Engineer, Transportation and Packaging Research Laboratory, assisted the Maritime Administration officials in developing the Department's part of the program and presented a summation at the conclusion of the Conference. Also representing the Laboratory at the Conference were Philip L. Breakiron and C. J. Nicholas.

Apple Packaging Study Begun: Donald R. Stokes of the Transportation and Packaging Research Laboratory has initiated field work on a study of several different methods of packaging apples in consumer-size packages. The study, which compares the costs, consumer acceptance, spoilage and bruising losses for the McIntosh variety, is being done in cooperation with Crist Brothers Orchards of Walden, New York; Grand Union Stores of Patterson, New Jersey; the Keyes Fibre Company and the New York State Department of Markets. Packaging methods being compared are the 3-pound polyethylene film bags and the 3-pound stretch film overwrapped fiber polyethylene film bags and the 3-pound stretch film overwrapped fiber trays.

Participation in Perishable Handling Conference: The Transportation and Packaging Research Laboratory had an active part in the 25th International Conference on Handling Perishable Agricultural Commodities at Purdue University this year. Among the four pieces of transportation equipment on exhibit was the Laboratory's prototype refrigerated van container which drew much favorable comment and interest from the 144 Conference members. Representing the Laboratory at the Conference were Karl E. Hoke, Research Leader, Meat Handling, who served as chairman for a half-day session of the program devoted to sanitation in handling of fresh meat and by Phil Breakiron, Laboratory Chief, who presented a paper on "Improving Refrigeration in Transportation of Fresh Meat."

Progress in Standardizing Dimensions of Shipping Containers: The goal of standardizing the dimensions of shipping containers for fresh fruits and vegetables by the end of 1975 was announced at the 69th Annual Convention of the United Fresh Fruit and Vegetable Association by the Chairman of the United Fresh Fruit and Vegetable Utilization Committee. Donald R. Stokes, Transportation and Packaging Laboratory, is a consultant to this Committee and attended the annual convention of the Fresh Fruit and Vegetable Association. He also met with other industry representatives concerning the need for research to develop improved packaging for perishable products shipped by air freight to eastern domestic markets and overseas markets.

Sheep Coccidiosis Investigated: Robert G. Leek, Animal Parasitology Institute, recently visited sheep feedlot operators and the lambing facilities of sheep producers in Utah and Idaho. Coccidiosis in sheep continues to be a sporadic problem, especially in lambs, and appears to be most prevalent in the states of the intermountain west. The purpose of the trip was to examine the facilities and management systems being used. Fecal samples, for determination of the species of coccidia available to infect the sheep, were collected. Those visited expressed appreciation for USDA's interest in their problems and for having had an on-site visit by a representative from Beltsville.

Experimental Shipment of Texas Grapefruit in Prototype Van Container: The second experimental shipment of grapefruit ever carried in the ARS prototype refrigerated van container was pronounced an unqualified success by Mr. Thomas Camp of the ARS Austin, Texas, Field Station who accompanied the test shipment from the Rio Grande Valley of Texas to Cleveland, Ohio. Mr. Camp reports that the maximum spread in fruit pulp temperatures throughout the load during the trip, as measured by thermocouples, was 1° F. This is the first experimental shipment made in the new container since the recent completion of certain

ARS-specified engineering refinements in the refrigeration unit and air circulation system. The project is a joint undertaking of the Transportation and Packaging Research Laboratory and the Austin and Harlingen, Texas, and Orlando, Florida, laboratories of the Southern Region of ARS.

Foreign Visit: Dr. C. H. Hanson, Leader, Applied Plant Genetics Laboratory, presented a paper entitled "Breeding Improved Lucerne Varieties for Dehydrating" at the First International Green Crop Drying Congress held April 8-13, 1973, at the University of Oxford, England. The report described the nature and causes of variation in saponin, coumestrol, protein, and crude fiber contents of alfalfa observed in nationwide studies, and progress made in improving chemical composition by selection. He gave a seminar on "Breeding Alfalfa for Disease and Insect Resistance" at the Royal Veterinary and Agricultural University, Copenhagen, Denmark. He also conferred with scientists there and at the Station d'Amelioration des Plantes Fourrageres, Lusignan, France, on selection methods and variety synthesis in autotetraploid crops.

Visitors

An Australian hydrologist, Dr. John Langford, is working for six months with the Hydrograph Laboratory of the Plant Physiology Institute on a Churchill Fellowship. His particular interest is the use of mathematical models to assess the effect of various management practices on the yield of water from agricultural watersheds.

Situations and Events

Agricultural Engineers Spring Meeting: American Society of Agricultural Engineers--Washington, D.C.--Maryland Section--held their spring meeting in the National Agricultural Library, March 29. The program was entitled "Resource Management" (formerly Solid Waste Disposal). The program attracted speakers and participants from several State and Federal organizations to discuss state of the art and the interactions of research, regulations, farmers, and communities. Mr. William A. Bailey, Light and Plant Growth Laboratory, was elected Section Chairman-elect for the coming year and Chairman for the following year.

News Media Gets the Bird: During the past year, Dr. P. A. Sarvella's inter-generic hybrids have been featured in several national releases. The first was an article "Science Modernizes Holiday Bird" that appeared in the November 20, 1972, issue of the National Geographic School Bulletin. In April 1973 she made two TV tapes for NBC. The first was on "Rare Avian Crosses" for the "Across the Fence" program. The second was entitled "Developing Hybrid Birds for Research", which appeared on the "Down to Earth" program. In addition, a TV tape was made by Newsweek which was released the week before Easter. Her hybrids were also featured in two short radio tapes and were visited by Mrs. Elsie Vanocur, writer for the Washington Post. Dr. Sarvella is in the Applied Plant Genetics Laboratory.

General

For your information, the following are members of the Beltsville EEO Advisory Committee:

Mrs. Alice Gibson
Rm. 101, Bldg. 007, ARC-W

Mrs. Barbara Aulenbauch
Rm. 6, Bldg. 002, ARC-W

Mrs. Lyndon E. Owens
Bldg. 104B, ARC-E

Mrs. Linda S. Randall
Bldg. 263, ARC-E

Mrs. Mary Marshall
Rm. 115, Bldg. 308, ARC-E

Dr. Kenneth Deahl
GH 1, ARC-W

Mrs. Maxine Lutz
Rm. 206, Bldg. 001, ARC-W

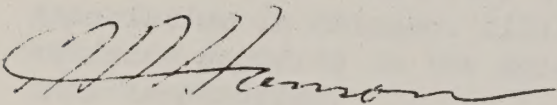
Mr. Joe Eldridge
Bioscience Bldg., ARC-W

Mr. Samuel Marshall
Rm. 121, Bldg. 307, ARC-E

Mr. Merrill Timmins
Bldg. 228, ARC-E

Mr. Alton Donaldson
Shops, ARC-E

Mr. Charlie Jackson
Rm. 106, Bldg. 200, ARC-E



A. A. Hanson
Director

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NOTES FROM THE AREA DIRECTOR

No. 15

June 7, 1973

Employee Activities

Dr. J. M. Good, Former Chief, Nematology Laboratory, has accepted a position as Pest Management Coordinator with the Extension Service, Agriculture and Natural Resources Staff, USDA, Washington, D.C. His new assignment will be to develop programs for integrated management of insects, weeds, plant diseases, and nematodes. During the period 1964 to 1972, Dr. Good provided outstanding leadership for the national programs of the Nematology Investigations, Crops Research Division. Since the reorganization he has served as the Chief of the Nematology Laboratory of the Plant Protection Institute at Beltsville.

Dr. Burton Y. Endo has been assigned as Chief of the Nematology Laboratory.

Dr. Dora K. Hayes, Chemical & Biophysical Control Laboratory, AEQI, has been elected to membership in the American Society of Biological Chemists, Inc. Dr. Hayes attended the Federation meetings in Atlantic City, New Jersey, in April.

Mrs. Otelia F. Bodenstein, Biological Evaluation of Chemicals Laboratory, attended the 59th Mid-Year Meeting of the Chemical Specialties Manufacturers Association in Chicago, Illinois, May 13-16. Mrs. Bodenstein serves in an advisory capacity to the Scientific Committee of the Insecticide Division of this Association.

Dr. William A. Moats, Dairy & Poultry Products Marketing Laboratory, attended the annual meeting of the American Society for Microbiology in Miami, Florida, May 6-8, and presented a paper entitled "Factors Affecting the Selectivity of Brilliant Green-Phenol Red Agars" by William A. Moats and J. A. Kinner.

Drs. P. B. Adams, R. D. Lumsden, and G. C. Papavizas, Soilborne Diseases Laboratory, participated in the Fourth Eastern Research Conference on the Ecology of Root-Infecting Microorganisms. The Conference was held in April in Gainesville, Florida and was attended by about 100 people. Drs. Adams, Lumsden, and Papavizas presented research papers on root-infecting fungi. In addition, Dr. Papavizas gave the summary and synthesis and final comments on the entire conference.

Mr. Phil Breakiron, Transportation & Packaging Research Laboratory, participated recently in a meeting of the MH-1 Committee of the American National Standards Institute in Chicago. The committee has made good progress on size standardization, but has reached a temporary impasse on specifications for testing methods because of a conflict between its proposed testing methodology and the current specifications of the American Society for Testing Materials.

Dr. David G. McHaffey, Biological Evaluation of Chemicals Laboratory, spoke to the 6th and 7th grade students at Brock Bridge Elementary School in Laurel, Maryland, May 24. The topic of the presentation was "Insects and Their Relationship to Man." After a brief introduction, the beneficial and injurious aspect of insect life as it pertains to man was discussed. A brief section on the methods man uses to control insect populations concluded the discussion. Most of the students were very responsive and showed considerable interest throughout the presentation.

Dr. E. E. Finney, Jr., Chairman, Agricultural Marketing Research Institute, and five to seven members of the Transportation & Packaging Research Laboratory, will join about four other ARS researchers from Florida and Texas in a package testing demonstration and conference at the Package Research Laboratory, Rockaway, New Jersey, June 7. On June 8 the group will tour the container handling terminal of Sea-Land Service, Inc., of Elizabethport, New Jersey. The group will also board one of the largest, newest containerships in the world, a \$35 million, 30,000 ton SL-7.

On April 12, Mr. R. E. Redfern, Biological Evaluation of Chemicals Laboratory, participated in the Laurel Junior High School's Career Development Project. The Theme of the presentation was entitled "Agriculture Makes Tomorrow Better." Approximately 45 eighth and ninth grade students participated.

On May 1, Dr. Jack R. Plimmer, Pesticide Degradation Laboratory, attended a meeting in Washington, D.C. of the U.S. Army Contractor Selection Board for Microbiological Degradation of Military Standard Pesticide Formulation. On May 22, Dr. Plimmer presented a paper on the Disposal and Control of Pesticides before the Chemical Section of the National Safety Council at the National Academy of Sciences, Washington, D.C.

Dr. Curtis W. Sabrosky, Systematic Entomology Laboratory, IIBIII, has been invited to attend a symposium opening new research laboratories of the Museum of Comparative Zoology at Cambridge, Massachusetts. He has been asked to officially represent the Beltsville Agricultural Research Center.

Dr. Richard H. Foote, Chief, Systematic Entomology Laboratory, IIBIII, has been invited to serve as a member of an ad hoc Panel on the Handling of Biological Data. This group is being formed by the Science Information Service of NSF to guide its formation of policy in this important information-handling activity. Dr. Foote also has recently participated in a one-day workshop on the Economics of Journal Publication sponsored by the Council of Biology Editors. Discussion centered on ways and means of effectively lowering costs of publishing primary literature.

Honors and Awards

Ph. D. Awarded: On Saturday, May 12, Mr. Bobby L. Glass, Agricultural Chemicals Management Laboratory, was awarded the Ph. D. degree in Chemistry by Howard University.

Guest Lecturer: Dr. John C. Brown, Plant Stress Laboratory, was guest lecturer at the Department of Soil and Crop Sciences, Texas A&M University, College Station, Texas, May 2. His subject was "Genetically Controlled Biological Systems that Are Responsive to Nutrient Stresses in Plants."

Banquet Speaker: Dr. Donald T. Krizek, Plant Stress Laboratory, presented the annual banquet address at the North Jersey Section, Central Subsection Meeting of the American Chemical Society in Union, New Jersey, May 15. The title of his talk was "Controlled Environment for Prescription Growing."

American Society of Agricultural Engineers Meeting: Mr. Robert F. Guilfooy, Transportation & Packaging Research Laboratory, has been invited to present a paper on transportation of grain to the Annual Meeting of the American Society of Agricultural Engineers at the University of Kentucky in Lexington, June 18-20.

Speakers at Dairy Conference: Dr. Frank N. Dickinson and Dr. H. Duane Norman of the Animal Improvement Programs Laboratory were invited speakers at the 1973 National Association of Animal Breeders Dairy Sire Analysts' Conference in Syracuse, New York, May 9-10. Dr. Dickinson presented a talk entitled "Planned Changes in USDA-DHIA Sire Summary Procedures." Dr. Norman presented a talk entitled "What Trait Appraisal Research Tells Us." This meeting is an annual conference of the Dairy Sire Analysts from artificial insemination organizations throughout the United States who are in charge of selecting dairy bulls for use in the artificial insemination program.

Participation in Meat Science Conference: Karl E. Hoke of the Transportation & Packaging Research Laboratory has been invited to present a paper on "Trends in Meat Marketing" at the 26th Annual Reciprocal Meat Conference of the American Meat Science Association of the Pennsylvania State University, University Park, Pennsylvania, June 17-20.

Meat Packaging and Handling: G. M. James and B. H. Ashby of the Transportation & Packaging Research Laboratory have been invited to present a paper on their research on packaging and handling of meat products at the Institute of Food Technologists Annual Meeting in Miami, Florida, June 13.

Laboratory Receives Army Commendation: The Transportation & Packaging Research Laboratory recently received a commendation from Brigadier General Garland A. Ludy, Director of Army Transportation, for assistance to the Department of Defense in helping that Department to reduce spoilage losses and transportation costs in shipping U.S.-produced iceberg lettuce to overseas commissaries. According to the Army's estimate, the results of the project will produce a savings of \$600,000 per year for D.O.D. This work was cooperative with marketing researchers in other regions of ARS. Mr. Edminster has expressed the hope that the technology developed in this cooperative research can be used to expand commercial shipments of iceberg lettuce to overseas markets to the benefit of the American farmers and the U.S. balance of payments.

Cooperative Activities

ARS Prototype Van Container to Enter U.S. Lines Fleet: A memorandum of Understanding between ARS and the United States Lines signed recently will permit the ARS-developed experimental refrigerated van container to carry test shipments of perishable products on the containerships of the United States Lines Company. Memoranda of Understanding with other carriers are currently under negotiation.

Rice Protein Studies Expanded: Cooperative studies between Beltsville staff and ARS and State personnel in the rice-growing areas of U.S. have been expanded in order to characterize various genetic and environmental causes of variation in rice production. The relative importance of variety, nitrogen level, location, year, and interaction effects on quantity and quality of protein, yield of grain, and agronomic traits is being determined. Milling tests will be conducted at Stuttgart, Arkansas and Beaumont, Texas. Chemical analyses for amino acids and protein, and statistical processing and interpretation of data will be done at Beltsville. Plans are also being made for biological evaluation of appropriate samples. Beltsville personnel participating in these studies include W. J. Wiser, C. Roy Adair, and Roger T. Smith of the Applied Plant Genetics Laboratory, PEGI, and Madelyn Womack, David A. Vaughan and C. E. Bodwell of the Protein Nutrition Laboratory, NI.

Biological Control of Snails Investigated: Dr. Lloyd Knutson, Systematic Entomology Laboratory, conducted research on the biology of snail-killing flies and their application as biological control agents at the Institute for Agricultural Research, Nigeria, and the Institute for Public Health Research, University of Tehran, Iran, during 3-week periods in March and April. The field and laboratory studies were done in association with the Ecology Program, Office of Environmental Sciences, Smithsonian Institution, and the Iran Foundation. Also, Dr. Knutson studied collections of snail-killing flies at the Zoological Institute, Leningrad, and at the British Museum, London.

Conference on Cellular and Molecular Effects of Solar Ultraviolet Radiation: Dr. M. H. Christianson, Plant Stress Laboratory, attended the Conference on Cellular and Molecular Effects of Solar Ultraviolet Radiation, May 7-8 in Gainesville, Florida. This conference is supported by a contract from the Department of Transportation, Climatic Impact Assessment Program of the University of Florida, Interdisciplinary Center for Aeronomy and (other) Atmospheric Sciences. The Plant Physiology Institute, Plant Stress Laboratory, and Light and Plant Growth Laboratory are doing cooperative work with the Department of Transportation on the effects of ultraviolet radiation on plants. Dr. Christiansen represented the Beltsville ARC Plant Physiology Institute UV light research group.

Increasing Productivity in Palletized Transport: Donald R. Stokes of the Transportation & Packaging Research Laboratory, who represents ARS on the United Fresh Fruit and Vegetable Association's Palletization and Productivity Committee, recently attended a meeting of the committee in Dallas, Texas. The Laboratory will cooperate with the committee in research to determine the degree of product cooling achieved in palletized units of different types of shipping containers of various products, and to develop ways of improving product cooling where necessary. The goal of this joint work with industry is to increase productivity in transport and distribution of perishable food products.

Cooperation with Florida State Department of Agriculture: George C. Steyskal, Systematic Entomology Laboratory, cooperated recently with the Florida State Department of Agriculture by sorting and identifying a large number of acolyprate flies in the State's collection of arthropods at Gainesville.

Several species not previously known to occur in Florida were found; a species not previously known to science was discovered; and a previously unknown host of a fruit fly was detected. Field explorations in western Florida yielded about 600 specimens, mostly various species of flies, which proved to be valuable additions to the National Collection of Insects in Washington.

ARS Represented on New Flower Marketing Committee: Donald R. Stokes, Transportation & Packaging Research Laboratory, was appointed a member of the Flower Marketing Committee at a meeting of the Production Marketing Association officials at Dallas, Texas, May 10. The committee was formed to study the problem of how to bridge the distribution gap between the growers of flowers and foliage plants and the supermarket industry, who are interested in mass merchandizing flowers and foliage plants. The conventional method of distributing floral products is through floral wholesalers and retail florist shops. Packing and transport methods suitable for conventional floral wholesalers and retail florists do not meet the needs of the supermarket industry interested in merchandizing floral products as an adjunct to their food retailing operations.

Exploratory Research on Grain Transport Underway: Robert F. Guilfooy, Jr., Transportation & Packaging Research Laboratory, recently began a study of railroad shipments of grain in boxcars and covered hopper cars. The purpose of the study is to determine how effectively the full grain carrying capacities of the cars are being utilized.

ARS "Smokey Bear": ARS and the Department now have a traveling symbol of the Department's concern about the high costs of transporting and handling food products which also provides visible evidence that ARS is doing something to increase efficiencies and productivity in these important areas of marketing. The prototype refrigerated van container developed by the Transportation & Packaging Research Laboratory and now being used in experimental shipments of grapefruit from Texas to California, recently was lettered in red and blue 12", 9" and 7" high letters on the white background of both its sides as follows:

U.S. Department of Agriculture
Agricultural Research Service
Experimental Van Container
Transportation Research Working For You

Savings in Heavier Loading of Florida Citrus Shipments: Preliminary results of research to compare the economic and physical feasibility of shipping more boxes of citrus in the smaller mechanical refrigerator cars indicates that the loads can be safely increased by 6 percent. A new per-car rail freight rate proposed as an incentive to encourage heavier loading would produce savings in freight and refrigeration by as much as 21 percent, compared with the present rail rate. Bill Black of Transportation & Packaging, Beltsville, is handling the terminal market end of the study in cooperation with the Florida Grower-Shipper League and the Orlando, Florida Horticultural Crops Research Center, Southern Region, who originate the tests.

Visitors

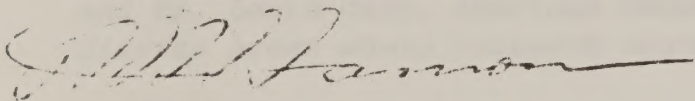
Peoples' Republic of China Newsmen Visit Beltsville: A group of 22 Mainland Chinese journalists visited the Beltsville Agricultural Research Center May 31. They were welcomed by Drs. S. C. King, P. A. Putnam, C. E. Weir, J. Hilton and Mr. Britt. Presentations were as follows: Search for Alternate Methods of Pest Control by Mr. Martin Jacobson, Chief, Biologically Active Natural Products Laboratory; A Light in the Dark by Dr. H. M. Cathey, Chief, Ornamentals Laboratory; Fat Analyzer for Use With Meats, Karl Norris, Chief, Instrumentation Laboratory; Modern Methods for Controlling Insects in Aircraft and Other Enclosed Spaces by W. Sullivan and M. Schechter, Chemical and Biophysical Control Laboratory; Vegetable Breeding Research by Dr. R. E. Webb, Chief, Vegetables Laboratory; Air Pollution Studies by Dr. H. E. Heggstad, Chief, Air Pollution Laboratory; and Composting Sewage Sludge by Dr. J. D. Menzies, Chief, Biological Waste Management Laboratory. Dave Morgan of the Visitor Center gave a brief conducted tour of the Center and Chinese Tea and American coffee and cookies were served during the break. The trip seemed to be an outstanding success. The newsmen especially enjoyed talking to the people who made the presentations and their many associates. Mr. Bill Hill of the Evening Star, representing the American Society of Newspaper Editors, accompanied the Newsmen as host.

Plant Virology Laboratory Guests: Dr. Winston Salser, Department of Biology, University of California, Los Angeles, recently visited the Plant Virology Laboratory and conferred with Dr. Diener concerning the possibility of cooperative work with the aim of determining the complete nucleotide sequence of the potato spindle tuber viroid. Dr. Vernon Riley, Chairman, Department of Microbiology, Pacific Northwest Research Foundation, Seattle, Washington, discussed with Dr. Diener his intriguing work on the LDH-elevating virus, which, in his judgement, may be the first evidence for the existence of viroids affecting mammals. Dr. R. H. Kimberlin, Institute for Research on Animal Diseases, Agricultural Research Council, Compton, Berks, England, visited the Laboratory and informed Dr. Diener of his most recent work on scrapie, which now indicates the presence of a low molecular weight DNA in scrapie-affected, but not in healthy, brains.

Transportation & Packaging Visitors: Recent visitors to Transportation and Packaging included the following: Kenneth J. Weibel, Special Representative, Freight Loss and Damage Prevention Section, Association of American Railroads to work with Karl Hoke on joint AAR-ARS studies to find ways of reducing losses in rail shipments of fresh meats. Dr. David Mordenhesser, Associate Editor of Modern Packaging Magazine, McGraw Hill Publications, to visit Donald R. Stokes to obtain information for article on developments and trends in packaging and marketing fresh fruits and vegetables. Mr. John Germer, Product Engineer, The Budd Company, to obtain information on recommended features and design specifications for refrigerated trailer and van container bodies from Phil Breakiron and Bob Guilfooy. Mr. Howard P. Kunkle, Manager, Railroad Division, Thermo King Corporation, to discuss plan for cooperative research in transport refrigeration with Phil Breakiron. Mr. Lawrence A. Risse, ARS, Orlando, for training prior to assignment to ARS Rotterdam Laboratory, European Marketing Research Center. Mr. John Niedlinger, Office of Ports and Intermodal Systems, Maritime Administration, to meet with Phil Breakiron concerning MARAD research contract.

General

Visitor Staff Activities: Our Visitor Staff, formerly part of the Educational Services Branch, Information Division, and now under the Area Director's Office, has been reduced by three Tour Leaders. In spite of this reduction, they have still managed to handle a total of 14,842 visitors over the past ten months. Of this number 1,110 were foreign, 500 were technical, 8,296 were students, and 3,936 were farmers and others. Several University classes visited the Center. Some schools bring their classes to the Center year after year. Special groups included: The Wool Growers Association, Economic Development Institute (World Bank) European participants, Widening Horizons Program - a White House sponsored program with Mrs. Don Paarlberg, wife of the Director of Agricultural Economics, as hostess, Western Wheat Association sponsored foreign groups, Southern States Cooperative Seed Division group, an AID group attending the USDA Graduate School, foreign military servicemen, and participants in the OPEDA Science Fair.



A. A. Hanson
Area Director

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
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NOTES FROM THE DIRECTOR

No. 16

June 21, 1973

Employee Activities

Dr. L. W. Woodstock, Seed Quality Laboratory, visited Israel and Poland, March 25-April 16, 1973, to review PL 480 projects and other seed- or grain-related research. In Poland, he was invited to give lectures at Plant Breeding and Acclimatization Institutes at Radzikow, Krakow, and Olsztyn. Dr. Woodstock also visited the European Market Quality Laboratory in Rotterdam, Netherlands, where he met Dr. William G. Chace, ARS, and Mr. Lewis Camp, American Seed Trade European Representative, to discuss areas where research might aid seed exports to Europe.

Cooperative Activities

Dow Chemical Co. Seminar: R. E. Hardenburg, AMRI, was invited to present a seminar June 7 on "Controlled and Modified Atmosphere Storage and Packaging of Horticultural Products" to the Food Packaging Research Laboratory of Dow Chemical Company, in Midland, Michigan. Dow is a leading fabricator and converter of food packaging films--many with sophisticated protective qualities. The Company has volunteered to supply samples as needed for research.

Scale Collection Reorganized: Dr. Douglass R. Miller, Systematic Entomology Laboratory, spent four weeks at the University of California, Davis, reorganizing the extensive scale insect collection stored in the Department of Entomology. Prior to this visit, many valuable specimens were unavailable to science, but as a result of Dr. Miller's effort, this study material can now be used by any interested specialist. Many specimens from the collection at Davis have now been transferred to the National Insect Collection in Washington. While at Davis, Dr. Miller presented a seminar "Zoogeography of the Eriococcidae." Field studies were also conducted on the mealybug fauna of the California Islands.

Putting Research to Work

Scientific Illustrations Displayed: A number of living insects are currently on display at the "Insect Zoo" at the Smithsonian's Museum of Natural History at 10th Street and Constitution Avenue. The Smithsonian will soon add to this exhibit a number of excellent color illustrations of various insect pests in their respective habitats drawn during the past several years by Mr. Arthur D. Cushman, former illustrator in the Systematic Entomology Laboratory.

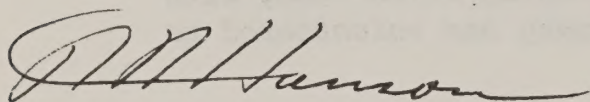
Label Extension Arranged: Dr. H. M. Cathey, Chief, Ornamentals Laboratory and Dr. H. E. Heggstad, Chief, Air Pollution Laboratory, have collaborated on research which has resulted in the extension of the label for a commercial growth regulator to show how the chemical can be used on petunias to reduce air pollution damage caused by ozone and sulfur dioxide.

Meat Analyzer Tells Fat at a Glance: George F. Button, Jr., Electronic Technician and Karl H. Norris, Chief, Instrumentation Research Laboratory, have invented a device that measures the fat content of ground beef accurately and instantaneously. The first commercial version of this fat tester was demonstrated in New York City on June 6.

Foreign Visitors

Dr. Roy Nichols, Plant Physiologist, Glasshouse Crops Research Institute, Littlehampton, England, spent May 30-31 at Beltsville discussing research with various staff members of the Horticultural Crops Marketing Laboratory, the Post-Harvest Plant Physiology Laboratory and the Instrumentation Research Laboratory of AMRI.

Mr. Jean-Claude Rousseau, Agricultural Engineer, from L'Air Liquide, Paris, France and Jean-Francois Orsini, International Patents Negotiator, Paris, visited R. E. Hardenburg of the Horticultural Crops Marketing Laboratory.



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NOTES FROM THE DIRECTOR

No. 17

July 5, 1973

Employee Activities

Drs. Webb, Siden, and Deahl, Vegetable Laboratory, attended a symposium on "Potatoes and Birth Defects" in Montreal, Canada, on June 14. This symposium was held in conjunction with the annual meeting of the Teratology Society.

Dr. Charles Sloger, Plant Nutrition Laboratory, attended the joint meeting of the American and Canadian Societies of Plant Physiologists in Calgary, Alberta, Canada, June 17-21. He presented a paper entitled "Assimilation of Ammonia by Glutamine Synthetase and Glutamate Synthetase in N_2 -fixing Bacteroids from Soybean Nodules". He also participated in the informal discussion section on biological N_2 fixation by presenting his research data about the influence of the environment on symbiotic N_2 fixation in soybeans.

During a Special Foreign Currency (SFC)-supported trip to Europe, May 15-June 16, Jack R. Coulson, Chief, Beneficial Insect Introduction Laboratory, visited ARS Beneficial Insect Laboratories in France and Italy to discuss ARS biological control program plans and needs, and consulted with entomologists at the Commonwealth Institute of Biological Control station in Switzerland, concerning continued CIBC-ARS cooperation in biological control research. Mr. Coulson also reviewed several SFC research projects in Yugoslavia, and investigated possibilities for additional SFC research in Poland in the areas of biological control and insect taxonomy.

Mrs. Patricia C. Jackson and Dr. Donald T. Krizek, Plant Stress Laboratory, attended the Annual Meeting of the American and Canadian Societies of Plant Physiologists in Calgary, Canada, June 17-21, 1973. Mrs. Jackson presented a paper on "Uptake and Release of Mercury Vapor by Plants." Dr. Krizek was Chairman of the Washington Section of the Society. In addition, he presented a paper at the Environmental Physiology Section entitled "Accelerated Growth of Birch Seedlings in Controlled Environments" and participated in a workshop on "Controlled Environments."

Mrs. Barbara Aulenbach and Dr. Alley E. Watada of the Horticultural Crops Marketing Laboratory participated at the annual Institute of Food Technology meeting in Miami Beach, Florida. Mrs. Aulenbach presented a paper entitled "Sensory Evaluation of Cantaloupe: Is Soluble Solids a Good Quality Index?" at the Flavor and Sensory Evaluation Session. Dr. Watada gave an invitational paper entitled "Quality Evaluation of Fruits and Vegetables by Spectrophotometric Technique" at the Postharvest Physiology Pathology and Biochemistry of Fresh Produce Symposium. Over 7,000 people attended the IFT meeting.

Wilson Smith of the Horticultural Crops Marketing Laboratory attended the semi-annual meeting of A.S.H.R.A.E. in Louisville, Kentucky, on June 26-27. He presented a paper entitled "Maintenance of Quality of Stone Fruits After Harvest" in a symposium on "Refrigeration and Post Harvest Handling of Fruits and Vegetables." The number of persons attending the symposium was quite small, but the papers were well received.

Awards

Signal Service Award: Dr. Richard L. Hiner, Livestock and Meat Marketing Laboratory, was presented the Signal Service Award of the American Meat Science Association at the 26th Annual Reciprocal Meat Conference, University Park, Pennsylvania, June 20, 1973. The award was in recognition of the outstanding basic and applied research Dr. Hiner has done on the physical, chemical, biochemical and histological characteristics of meat. Among Dr. Hiner's many contributions to meat research, the presentation specifically cited his work to develop criteria for determining tenderness of meat, the tenderizing effects of freezing on meat, the heritability of tenderness in cattle, and the use of ultrasonics for measuring fat thickness and muscle area in cattle and hogs. Dr. Hiner has authored or co-authored nearly 100 publications in the meat field.

Poultry Science Association Meeting: Mr. Clarence E. Harris, Dairy and Poultry Products Marketing Research Laboratory, has been invited to present a paper on "Noise in Poultry Processing Plants" to the 62nd Annual Meeting of the Poultry Science Association at South Dakota State University in Brookings, South Dakota, August 6-10, 1973. Mr. Harris has been working in cooperation with poultry scientists at the University of Maryland to develop recommendations for reducing the noise level in poultry processing facilities.

Foreign Visitors

On June 26 and 27, we were honored by the visit of six outstanding scientists from the Peoples' Republic of China. They were highly pleased with their visits with the Chiefs and members of the following laboratories: Organic Chemicals Synthesis, Insect Chemosterilants, Biologically Active Natural Products, Insect Physiology and Biological Evaluation of Chemicals. Drs. Beroza, Borkovec, Jacobson, Redfern and Robbins were impressed with the knowledge and ability of the visiting scientists.

Mr. Alex Graham, Engineer, Division of Food Preservation, Commonwealth Scientific and Industrial Research Organization (CSIRO), Sydney, Australia, visited with Mr. Karl E. Hoke, Transportation & Packaging Research Laboratory, to discuss areas of marketing research currently underway and the application of research results to the transportation and food distribution system.

Dr. Anthony C. O'Sullivan, Head, Department of Dairy Technology, Agricultural Institute, County Cork, Ireland, recently visited with scientists in the Dairy Foods Nutrition Laboratory. Dr. O'Sullivan and his group have been involved in research on whey protein concentrates derived from membrane processing and expressed considerable interest in DFNL research on the use of the lactose-salts fraction of whey in animal feeds.

Dr. Teodor Wikerhauser of the University of Zagreb, Yugoslavia, visited the Animal Parasitology Institute on June 5, 1973, to discuss his PL 480 research on immunization of cattle against tapeworms with sponsoring scientist, Dr. H. Herlich, and Dr. F. G. Tromba.

Dr. Andrzej Malcezwski of the Department of Parasitology, Polish Academy of Sciences at Warsaw, visited the Animal Parasitology Institute on June 19. He discussed gastrointestinal helminth parasite problems of mutual interest with Drs. H. Herlich, F. G. Tromba and F. W. Douvres.

Mr. D. G. Elliott, Parasitologist at the Wallaceville Animal Research Center in New Zealand, visited the Animal Parasitology Institute on June 28. He discussed mutual research interests on chemotherapy and gastrointestinal parasitism in sheep and cattle with Dr. F. E. Enzie, Dr. H. Herlich and Mr. R. A. Knight. A tour of the facility provided him with a number of technical and management practices which he indicated would be of much use in the Wallaceville program.

Peter Timoney, Veterinarian, recently appointed Head of Equine Research for the Irish Republic, is visiting the Animal Parasitology Institute. Dr. Timoney is spending a year in the United States to obtain knowledge of current equine diagnostic methods which will be of use to the Irish horse industry upon his return to the Veterinary Research Laboratory, Abbotstown, Castleknock, County Dublin, Ireland.

Dr. Milorad Tadic, Institute of Plant Protection, Zemun, Yugoslavia, visited Systematic Entomology Laboratory and Beneficial Insect Introduction Laboratory offices in Beltsville and Washington, June 19-25, to discuss his SFC research project on utilization of black light traps for study of insect fauna, and other matters concerning biological control and insect taxonomy.

Cooperative Activities

Peach Tree Conference: Dr. Charles D. Foy, Plant Stress Laboratory, participated in an inter-state peach tree decline conference at Byron, Georgia, on April 25-26, 1973.

Graduate Students Finish: Three University of Maryland graduate students have finished their theses under the technical direction of Dr. Carolyn D. Berdanier, Carbohydrate Nutrition Laboratory, Nutrition Institute.

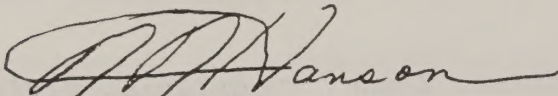
Putting Research to Work

Natural Enemies of Insects and Weeds Working Group: In May, the ARS Board of Directors approved the establishment of an ARS Working Group on Natural Enemies of Insects and Weeds to develop means of coordinating ARS research on these natural enemies of insect pests and weeds. Dr. W. B. Ennis, Jr., and Dr. M. D. Levin, both of NPS-PES, have been designated Chairman and Co-Chairman, respectively, of the Working Group and Jack R. Coulson, Chief, Beneficial Insect Introduction Laboratory, has been named Northeastern Regional representative to

the Group. In this connection, Mr. Coulson and Dr. Levin attended the initial meeting of the Southern Region's newly established Ad Hoc Committee on Biological Control of Insects and Weeds, June 20-21, in Gainesville, Florida.

Retirements

We wish the best to our recent retirees. Those with over 40 years of service are: Dr. C. Roy Adair PGGI, Mr. Charles H. Hill API, Dr. Richard L. Hiner AMRI, and Dr. Paul R. Miller PPI. Those with over 30 years are: Dr. W. K. Bailey PGGI, Mr. Harley A. Daniel Visitor Service, Mr. William F. Gibson ARCO, Mr. Nathan Green AEQI, Mrs. Vinette V. Griffin PPI, Mr. Stanley A. Hall AEQI, Dr. Robert E. Heffernan AMRI, Mr. Joseph F. Herrick AMRI, Mr. Myers L. Miller ARCO, Mr. Harry T. Phillips APGI, Mr. John V. Thompson PPI, Miss Helen G. Wheeler AEQI, Mr. Dillard Williams ARCO, Mr. Walter D. Simpson ARCO, Mr. Charles H. Thomas ARCO, and Mr. Harold J. Warren ARCO. Those with over 20 years service are: Mr. Thurman C. Boyd ARCO, Dr. Allie Holbrook API, Dr. Oren L. Justice AMRI, Mr. Harwood E. Read ARCO, Mr. Arthur M. Sadler NI, Mr. Lloyd A. Spetzman PGGI, Mr. Lonnie Springfield ARCO, Lina L. Thies APGI, Mr. Eldon H. Wilkerson ARCO, Nancy J. Miles PPI, Katrine E. White NI, and Mr. Thomas D. John BAO. Other retirees are: Mr. George W. Dorsey ARCO, Mr. Alton L. Hamilton ARCO, Sadie V. Johnson PPI, Frances M. Lowe NI, Dr. Llewelyn Williams PHHI, Mr. Arne Olson NI, and Donna J. Tiffin AEQI.



A. A. Hanson
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NOTES FROM THE DIRECTOR

No. 18

July 26, 1973

Employee Activities

On July 2, Jack R. Coulson, Chief, Beneficial Insect Introduction Laboratory, took part in a taped interview to be broadcast over Voice of America August 2. The subject of the discussion was research on introduced beneficial insects for pest control, the international aspects and need for increased international cooperation in such research.

At the request of the Department of Defense, Dr. Thomas J. Sexton, Avian Physiology Laboratory, served as an advisor for the People-to-People Program, Azores, during June 17-27. Dr. Sexton worked with Dr. L. Armas, Portuguese veterinarian, and his staff at the Animal Research Station, Island of Terceira, in establishing a program for freezing bull semen. The station had been purchasing frozen semen from the United States since earlier attempts at freezing had been unsuccessful. Dr. Sexton also provided up-to-date training and technical assistance on management of bulls, handling of semen, and operation of laboratory equipment.

L. P. Dryden and T. R. Wrenn of the Biochemistry Laboratory met with officials of Alta Lipids, Ltd. in Boise, Idaho, on June 28. They visited Alta Lipids' plant for production of protected polyunsaturated fat feeds and discussed areas of possible future cooperation regarding their research on altering the composition of animal fats.

Dr. Joel Bitman of the Biochemistry Laboratory has been on a foreign trip June 21-July 26 during which he reviewed PL 480 projects in Yugoslavia, Poland, Israel, India and Pakistan. His travels also took him to Italy, England, Greece and Iran.

Dr. Patricia Sarvella, Applied Plant Genetics Laboratory, attended the 24th International Science Fair for outstanding high school students in San Diego. She served as a USDA judge to select the top ten students judged to have the best exhibits pertaining to Agriculture. They received USDA-OPEDA Science Fair Certificates and were offered summer positions in USDA laboratories near their homes doing work related to their interests. U.S. Savings Bonds were given by OPEDA to the top three winners.

Dr. Kent K. Stewart and Dr. C. E. Bodwell, Protein Nutrition Laboratory, attended the Ninth International Congress of Biochemistry July 1-7, 1973, in Stockholm, Sweden. Dr. Stewart presented a paper entitled "The Resolution of DL-Tryptophan by Affinity Chromatography on Bovine Serum Albumin-Agarose Exchangers," by K. K. Stewart and R. F. Doherty. Dr. Bodwell gave a presentation on "Separation of Proteins Using Horizontal Isoelectrofocusing," by C. E. Bodwell and G. J. Creed, during one of the three-hour poster sessions.

Dr. Bodwell reports that the poster sessions allowed for presentation of extensive data and for a generous and sometimes lively interchange of detailed information with a relatively high number of interested scientists. Following the Congress, Dr. Stewart also visited the Swedish Institute for Food Preservation Research, the Danish Meat Products Laboratory, the National Food Institute of Denmark and the Department of Animal Physiological Chemistry of the Danish Agricultural College in Copenhagen.

Seven scientists from the Nutrition Institute attended the 2nd International Symposium on Trace Element Metabolism in Animals and Man which was held in Madison, Wisconsin, June 18-22 under cosponsorship of the Steenbock Foundation and the U.S. Department of Agriculture. Approximately 200 scientists engaged in trace element research from all over the world attended, presented their papers and discussed the latest developments in this field. The rapid progress in trace element research is demonstrated by the fact that in the four years since the 1st TEMA Meeting, five new essential trace elements have been defined.

Foreign Visitors

Dr. Yoram Fuchs, Head, Department of Fruit and Vegetable Storage, of the Volcani Institute, Rehovot, Israel, visited the Post-Harvest Plant Physiology Laboratory July 12 and 13. Dr. Fuchs is working on immunological techniques for detecting plant hormones, under a PL 480 project sponsored by Dr. M. Lieberman of the Post-Harvest Plant Physiology Laboratory. Dr. Fuchs and Colleagues have obtained antibodies against gibberellic acid, abscisic acid, and indole acetic acid. He is now attempting to assay levels of these hormones in fruit tissues during their development and after harvest.

Several foreign scientists have been at Beltsville to visit the Nutrition Institute. Dr. Colin Mills, Chief of the Department of Nutritional Biochemistry of the Rowett Research Institute in Aberdeen, Scotland, presented a seminar on the "Metabolic Interactions Between Copper and Zinc." Dr. Jiri Parizek of the Czechoslovak Academy of Sciences in Prague gave a seminar on the "Interaction of Selenium with Heavy Metals" and Dr. Panic of the Institute for the Application of Nuclear Energy in Agriculture in Yugoslavia visited the Institute for two days.

The Nutrition Institute also welcomes Dr. Gunay Saner, a pediatrician from the University of Istanbul, Turkey, School of Medicine. Dr. Saner has been awarded a Fulbright Fellowship to work on the nutritional role of chromium. She has been assigned to Dr. Wayne Wolf of the Vitamin and Mineral Nutrition Laboratory to work on the analysis of chromium and other trace elements.

Awards

Mr. Robert L. Smiley, Research Entomologist, Systematic Entomology Laboratory, has completed his academic work and dissertation toward an M.S. degree in Entomology at the University of Maryland. He recently passed his "final" with flying colors. His dissertation, a taxonomic review of the mite genus Cunaxa, is currently being prepared for publication and his degree will be presented in October.

Dr. Charles R. Gunn, Plant Taxonomy Laboratory, presented the annual banquet address at the Society of Commercial Seed Technologists meeting held jointly with the Association of Official Seed Analysts in Ottawa, Ontario, Canada, June 10. The title of his talk was "And by their seeds you shall know them." The talk was given in response to a Meritorious Service Award given to Dr. Gunn at the Society of Commercial Seed Technologists meeting in Salt Lake City, Utah, during June 1972.

Cooperative Activities

Taxonomic Work on Wasps Nearing Completion: In an 8-year cooperative venture with Dr. M. Bohart of the University of California, Davis, Dr. Arnold Menke, Systematic Entomology Laboratory, has completed his contribution to a forthcoming book "A generic revision of the Sphecidae," to be published in 1974 by the University's press. This volume will be a basic contribution to the systematics of wasps in providing a long-needed understanding of the relationships among various genera and species of wasps and is expected to be the ultimate guide for the establishment of phylogeny in this important insect group throughout the world.

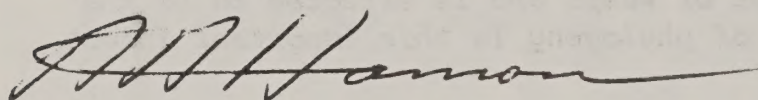
Florida Experiment Station Technical Bulletin Being Prepared: A manuscript entitled "Culicoides sand flies of Florida," a forthcoming Florida Experiment Station Technical Bulletin, is being prepared cooperatively by Dr. F. S. Blanton of the University's Department of Entomology and Dr. W. W. Wirth, Systematic Entomology Laboratory. Dr. Wirth recently traveled extensively in the State to obtain biological data and to collect miniature forms of the lesser-known species. The Bulletin is to be virtually monographic in scope, and will be an invaluable reference for all workers concerned with this particular group of pests.

Visiting Assistant Professorship: Dr. Douglass R. Miller, Systematic Entomology Laboratory, has been named to a one-year appointment as Visiting Assistant Professor in the Department of Entomology, University of Maryland. Dr. Miller has been collaborating with University entomologists on taxonomic research on scale insects and has provided effective guidance to several graduate students in the Department.

Food Distribution Study Initiated in Bridgeport, Connecticut: The Office of Economic Adjustment, Department of Defense, has requested the Food Distribution Research Laboratory to study the present food distribution system in Bridgeport, Connecticut, and to help find ways to improve it. This request is part of a Government-wide effort to work with and help communities identified by the Department of Defense as being in economic distress due to major defense cutbacks. There are virtually no supermarkets in or adjacent to the low-income residential areas in Bridgeport. Since shopping for food represents a substantial part of the total economic problem for most low-income families, an economic analysis and evaluation of food shopping facilities to serve this population will be undertaken and specific recommendations to improve the facilities will be developed. Studies will also be made to determine how small

independent wholesalers and retailers in the area can improve their operations and thus help to increase the efficiency of distributing food to all consumers in the area. In addition, restaurants and food establishments will be studied to determine their adequacy and potential for expansion in order to provide high quality food service establishments, increased employment possibilities and increased income.

ARS Food Distribution Study Results in Wichita: The results of an ARS study to improve the wholesale food distribution facilities and methods used in the Wichita, Kansas, area was presented at a meeting in Wichita on June 27 to the Wichita Area Chamber of Commerce. The meeting was attended primarily by the Agri-Business Committee of the Chamber who were instrumental in requesting the study. The presentation covered a proposed plan for a new 49-acre wholesale food distribution center for the area. Several sites, which are suitable for locating the center, were noted in the report. Bruce Lederer and Kenneth Brasfield of the Food Distribution Research Laboratory and Ralph Thompson (formerly with the Market Operations Research Laboratory) of APHIS gave the ARS study report.



A. A. Hanson
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NOTES FROM THE DIRECTOR

No. 19

August 16, 1973

Employee Activities

H. N. Holtan, Hydrograph Laboratory, represented the International Association of Scientific Hydrology on the International Hydrologic Decade Work Group for Representative and Experimental Basins meeting at Koblenz, Germany, during the week of June 18-22.

P. L. Breakiron, Chief, Transportation and Packaging Research Laboratory, returned recently from Europe where he participated in the International Conference on Transportation Research at Bruges, Belgium. While in Europe, Mr. Breakiron also participated in a program review of the ARS European Marketing Research Center Laboratory in Rotterdam, The Netherlands.

J. Doug Hansford, a Biological Waste Management Laboratory summer employee, is currently President of the National Council of Student Branches, American Society of Agricultural Engineers. He has been employed by the USDA for three summers as an Engineering Aid and is involved in studies on recycling animal wastes as a feed source for livestock.

Honors and Awards

Three Biochemistry Laboratory employees were recently awarded USDA Certificates of Merit for outstanding work performance. T. Randall Wrenn and Joan Weyant also received quality-within-grades and Mary Rucker was given a cash award. Dr. A. A. Hanson presented the awards at an informal gathering in the Animal Physiology and Genetics Institute Office.

Dr. Joel Bitman, Biochemistry Laboratory, has been invited to present a paper on "Encapsulated Vegetable Fats in Cattle Feeds" at the American Chemical Society symposium on microencapsulation to be held in Chicago August 26-31.

Dr. Charles S. Helling of the Pesticide Degradation Laboratory presented an invitational seminar July 2 to the Environmental Sciences Division of Oak Ridge National Laboratory. His subject was "Current Research in the USDA's Pesticide Degradation Laboratory."

Dr. Frank N. Dickinson, Chief, Animal Improvement Programs Laboratory, presented two invited papers at the recent annual meetings of the American Dairy Science Association, Pullman, Washington. The first was "Revisions to USDA's Methodology for Sire Summaries and Cow Indexes" and the second was "Using USDA-DHIA Sire Summary Information in Herd Management."

Dr. Dickinson has also been appointed to the Dairy Cattle Improvement Committee of the American Dairy Science Association. Dr. H. Duane Norman, a Research Scientist in the same Laboratory, also presented an invited paper entitled "Factors That Should Be Included in a New Sire Summary Model."

Cooperative Activities

University of Maryland Course Assisted: Dr. Willis W. Wirth, Systematic Entomology Laboratory, the world's foremost taxonomic authority on the biting midges, recently assisted Dr. D. H. Messersmith of the Department of Entomology at the University of Maryland, in presenting a summer course on the systematics, biology, ecology, distribution and control of these interesting flies.

Watershed Development Plans: The Hydrograph Laboratory is cooperating with the SCS in application of USDAHL-73, Model of Watershed Hydrology to watershed development plans primarily as a rationale for environmental impact statements required by EPA. Currently, they are getting ready to apply the model in Florida as a means of determining how much of an urban area can be paved without intensely aggravating flood flows or diminishing ground water levels.

California Insect Survey Bulletin Being Prepared: Dr. Arnold Menke, Systematic Entomology Laboratory, is editor of a California Insect Survey Bulletin on the semi-aquatic and aquatic Hemiptera (true bugs) of California. Dr. Menke recently traveled to the West Coast to consult with several contributors to the volume.

Revision Workshop: Nearly 20 scientists attended a workshop in Beltsville, June 26-28, to discuss final revision and updating of USDA Agricultural Handbook 224, "Field Manual for Research in Agricultural Hydrology." The Handbook is widely used in the design, instrumentation and operation of experimental watershed projects. Participants included Dr. C. B. England and H. N. Holtan, Hydrograph Laboratory, and J. B. Burford, Hydrologic Data Laboratory.

Weevil Project at Northern Arizona University: A cooperative agreement with the Northern Arizona University, Flagstaff, has resulted in a close collaborative effort between C. D. Johnson, Department of Entomology, and John M. Kingsolver, Systematic Entomology Laboratory, in a biosystematic study of several economically important genera of Bruchidae (seed weevils).

Defense Department to Cooperate in Transportation Research: The Defense Personnel Support Center of the Defense Supply Agency has informed the Transportation and Packaging Research Laboratory that it will cooperate with that Laboratory by making available shipments of U.S.-grown iceberg lettuce to its overseas commissaries for test shipments in the ARS experimental refrigerated van container.

Graduate Student Qualified for Ph.D. Degree: Louise M. Russell, Systematic Entomology Laboratory, visited the University of North Carolina at Raleigh July 9-11 for the defense-of-thesis examination of a candidate for the Ph.D. Degree. As an Adjunct Professor with the University, Miss Russell was an advisor to the student during his graduate studies.

National DHI Coordinator: Dr. Frank D. Murrill, Extension Dairyman, University of California, Davis, has accepted a one-year appointment in the Animal Improvement Programs Laboratory as the first National Dairy Herd Improvement Coordinator. This dairy records program is co-sponsored by the ARS and ES of the USDA, and the Cooperative Extension in the respective States. Mr. Murrill will coordinate the program nationally and will also act as Secretary for the National DHIA Coordinating Group.

Cooperator Wins Graduate Student Competition Award: Mr. Dennis M. Stiffler, University of Connecticut, was recipient of a cash award for presenting the best paper in the graduate student competition on July 16 at the Northeastern Section meeting of the American Society of Animal Science. The paper "Some Bacon Characteristics: Physical and Cooking" resulted from cooperative research with Dr. A. Kotula, Livestock and Meat Marketing Laboratory.

Research on Distribution of Floral Products: Bob Guilfooy of the Transportation & Packaging Research Laboratory, recently visited a number of wholesale floral products distributors in Washington, D.C., Baltimore, Pittsburgh, Cleveland, and Detroit to obtain their cooperation in a study which will compare the relative costs and advantages of "pooled" delivery systems for moving floral products and supplies from wholesale to retail florists versus conventional delivery systems in which each wholesaler delivers his own product.

Putting Research to Work

The Hydrograph Laboratory for the past four months has been building a portable unit for testing the infiltration capacity of soils under various types of vegetation and tillage practices. The unit will apply a steady intensity of rainfall to a 6' X 12' rectangular runoff plot. When all is in readiness, the unit will remain in travel status, testing soils and vegetation over the nation selected according to the needs of the Soil Conservation Service. The unit will also be applied on experimental watersheds at various ARS locations to test applicability of results in computing runoff from rainfall.

Visitors

Dr. Bertrand Schweisguth, Genetics and Plant Breeding Station, National Institute of Agricultural Research, Versailles, France, visited Dr. Gilbert D. McCollum of the Vegetable Laboratory July 23-27 to review onion and cole crop research in that Laboratory. He presented a seminar entitled "Plant Breeding in France" on July 26.

Dr. Vladimir Spasojevic, Institute for Vegetables, Smederevska Planka, Karadjordjeva 71, Yugoslavia, Principal Investigator for a PL 480 project on pepper breeding for mechanization of the harvest, visited Drs. Allan K. Stoner and Raymon E. Webb in the Vegetable Laboratory. He presented a seminar July 25 on cytogenetics of narrow or deformed spindle in corn.

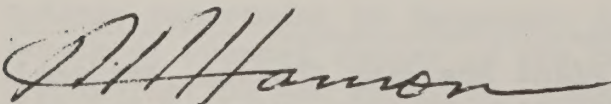
Dr. Y. Maki of the Hokkaido National Agricultural Experiment Station at Hokkaido, is visiting the Beltsville Agricultural Research Center for two months. Dr. Maki, a special representative of the Prime Minister of Japan is in the U.S. studying turf grass production and management practices. During his stay in the U.S. he will spend more than two weeks touring public, commercial, and private institutions dealing with turf grass research and production.

One of the world's leading Veterinary Parasitologists, Dr. H. McL. Gordon, Senior Helminthologist of the McMaster Animal Health Laboratory, Council for Scientific and Industrial Research for Australia, visited the Animal Parasitology Institute on July 12 and 13. He discussed problems on the epidemiology and chemotherapy of sheep parasites with several members of that Institute.

Dr. Kou Wea Shen, Professor at the University of Taiwan, and Dr. Chin Yen, Professor at Howard University (interpreter) visited the Transportation and Packaging Research Laboratory to discuss bulk transportation, USDA multi-purpose refrigerated van container, overseas transport research and unitized and palletized handling and standardization of shipping containers with Bill Black, Hunt Ashby and George James.

Dr. Doah Cox, Principal Investigator for the Hawaii Environmental Simulation Laboratory and Dr. Gordon Dugan, Principal Civil Engineer in Hawaii, visited the Hydrograph Laboratory on Wednesday, July 11, to discuss possible applications of USDAHL-73, Model of Watershed Hydrology to the erosion and chemical transport problems in Hawaii. Nancy Lopez, formerly a mathematician with the Hydrograph Laboratory, is now working part-time with the HESL in Honolulu and sends regards to all her friends here.

Mr. Walter Braun, engineer and owner of Proyectos Integrales, S.A., Mexico City, Mexico, visited the Transportation and Packaging Research Laboratory to discuss the development and use of an automatic, electronic shipboard system for monitoring the interior environmental conditions in refrigerated van containers with P. L. Breakiron.



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NOTES FROM THE DIRECTOR

No. 20

August 30, 1973

Employee Activities

Dr. Lloyd V. Knutson, a research scientist of the Systematic Entomology Laboratory, has been appointed Chairman of the Insect Identification and Beneficial Insect Introduction Institute. Dr. Knutson is a world authority on the taxonomy and biology of sciomyzid flies and their possible use in the biological control of pest and disease-carrying snails. He also enjoys an international reputation for his taxonomic research on other groups of Diptera. Both of these activities qualify him exceptionally well to coordinate the research programs of his Institute. Dr. Knutson received his graduate training at Cornell and has been with ARS since 1968.

Dr. Harold S. Ricker, a member of the Food Distribution Research Laboratory, will be serving as Acting Chairman of the Agricultural Marketing Research Institute from September 1, 1973, to June 30, 1974, while Dr. Essex E. Finney is at Princeton. Dr. Ricker is a native of Massachusetts and received his B.S. degree from the University of Massachusetts with a major in poultry science. He attended graduate school at Ohio State University where he was awarded a Ph.D in agricultural economics with a specialty in food marketing. Dr. Ricker served as Chairman of the Food Marketing Department at St. Joseph College in Philadelphia prior to joining ARS in 1970.

Mr. Robert L. Almond, Division Head, ARCO, has been elected Vice President of the Potomac Chapter of the American Institute of Plant Engineers.

On August 18, Larry Colbert, Ruminant Nutrition Laboratory, journeyed to Ursinus College in Pennsylvania to the Philadelphia Masters Championship Track Meet. Larry ran in the 100 yard dash, 220 yard dash, and 440 yard dash, winning a trophy in each race. He also participated in two relays; the one mile and 880 yard dash, winning a medal for each one. Mr. Colbert has also won a trophy for the best runner in the summer meets for the All Adult Comers Meet for Prince George's County.

Dr. James M. Iacono, Lipid Nutrition Laboratory, recently attended the First Symposium on Dietary Fats and Thrombosis at Lyon, France, where he gave a talk entitled "Influence of Dietary Fats on Platelet Lipids." Following the meeting in France, Dr. Iacono attended the IV International Congress on Hematology and Haemostasis at Vienna, Austria. Recent advances in nutritional research were stressed in these meetings which implicate dietary saturated fats in thrombosis.

Drs. R. C. Leffel, Deane Weber, Charles Sloger and Mr. V. L. Miller of the Plant Nutrition Laboratory recently attended the Fourth North American Rhizobium Conference in Columbus, Ohio. Drs. Weber and Sloger, and Mr. Miller each participated by giving talks on their research program with Rhizobium-Soybean symbiosis.

General

Laboratory Reassigned: The Biological Evaluation of Chemicals Laboratory is being reassigned from the Plant Protection Institute to the Agricultural Environmental Quality Institute. Mr. R. E. Redfern is Chief of this Laboratory.

Cooperative Activities

Wisconsin Duck Processing Plant Study Completed: Mr. Jesse W. Goble, Dairy and Poultry Products Marketing Laboratory, has completed a study for a duck processing firm in Wisconsin. The refrigerated and dry storage capacity needed to double plant output was determined and new plans were developed. The study was conducted in cooperation with Arnold Guthrie of the Marketing Division, Wisconsin Department of Agriculture.

The House Fly and Stable Fly - Vectors of Hog Cholera: Dr. Neal O. Morgan, Chemical and Biophysical Control Laboratory, and Dr. Lyle D. Miller, National Animal Disease Center, Ames, Iowa, demonstrated positive transmission of hog cholera by both the house fly and the stable fly. Ultra low volume methods of applying insecticides to buildings have been developed by Dr. Morgan for controlling these incriminated vectors of foreign animal diseases. Dr. Morgan cooperated with Dr. Ralph Bram to evaluate the ULV aerial application with four insecticides for controlling Tabanidae (other reported vectors of hog cholera) as well as house flies and stable flies, in western Alabama.

Mechanization of Grocery Warehouse Operations Discussed with Industry: On August 1, Mr. Carl W. Eschels, Assistant to the President for Corporate Planning and Research, Rapistan, Inc., met with Jack L. Runyan, Food Distribution Research Laboratory. While Mr. Eschels was specifically interested in Mr. Runyan's study of advanced mechanization in grocery warehouse operations, the discussion also covered what Rapistan, Inc. could contribute with food warehouse operations, and food warehousing operations in the future.

Enhanced UV Radiation Studies: The Department of Transportation by reimbursable agreement is supporting research in the Plant Physiology Institute on plant response to enhanced UV radiation. Dr. H. R. Carns is coordinating this work with that under contract with the University of Florida and the Utah State University on the same subject. The two responsible Laboratories are the Light & Plant Growth Laboratory and the Plant Stress Laboratory. Their objectives will be to study the effect of continuous daytime exposure

to 280-320 nm radiation at 1-10 times the present ambient level, on growth and morphogenesis of selected food, forage, fiber and ornamental plants under greenhouse and field conditions; study these effects on selected plant physiological processes considered critical in agricultural production; and determine if and how controlled environment-artificial light facilities can be used to more precisely define effects of UV radiation in the 280-320 nm band, and relate these to those observed under natural conditions.

A Data Handling "Breakthrough:" Hydrologic Data recorded in computer output microfilm in human readable form has recently been converted directly to computer readable magnetic tape. This "first" was accomplished through a contract with Information International, Inc. of Los Angeles, California. J. M. Clark and J. B. Burford of the Hydrologic Data Laboratory visited the plant in Los Angeles in July to supervise the contract and to become familiar with some of the new techniques.

Visitors

On Thursday, August 16, Don Ladd, Legislation and Special Assignments Staff, ARS, accompanied 15 Congressional staff members on a tour of Beltsville. Roger C. Knapp and Dale Sherwin, Legislative officers from the Secretary's office accompanied the group and report that they received many favorable comments. Dave Morgan and John Fleming deserve commendation for a job well done.

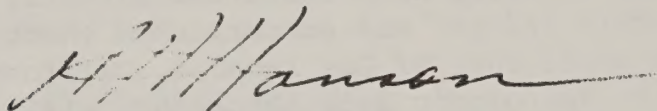
Recent foreign visitors to the Beneficial Insect Introduction Laboratory include the following individuals interested in U.S. research in biological control: Dr. Atsushi Naito, Head of the Entomology Laboratory, National Grassland Research Institute, Nishinasuno, Togichi, Japan; Dr. Bartlomiej Miczulski, Agricultural University of Lublin, Lublin, Poland; and Dr. Jerzy Lipa, Institute of Plant Protection, Poznan, Poland. Dr. Naito also visited the Turfgrass Laboratory and Dr. Lipa visited the Systematic Entomology and Insect Pathology Laboratories during their visit to BARC.

Mr. Alastair Macdonald of the Edinburgh School of Agriculture, Edinburgh, Scotland, visited with scientists at the Beltsville Agricultural Research Center on August 22. Dr. Lowell Frobish and Mr. Norman Steele of the Nutrition Institute and Dr. Robert Kraeling of the Animal Physiology and Genetics Institute discussed research studies regarding swine nutrition during pregnancy with Mr. Macdonald during his visit.

Dr. B. B. Migicovsky, Director General, Research Branch, Canadian Department of Agriculture, Ottawa, Canada, visited Beltsville on August 14. Environmental quality, nutrition and marketing were the subjects covered. Dr. Migicovsky commented on the enthusiasm of the scientists and was impressed by their freedom to make decisions regarding their work.

Drs. Maria Valdes-Hgo and J. Rodriguez, Instituto Politecnica Nacional, Mexico City, Mexico, visited the Plant Nutrition Laboratory to discuss Rhizobium japonicum nodulation of soybeans. Also visiting this Laboratory were three visitors from the Central Bank of Bolivia to discuss soybean production.

Dr. Cyro Paulino da Costa, Assistant Professor, Department of Genetics, Sao Paulo University, Sao Paulo, Brazil; and Mr. Plinio O. Werner, Director of a Brazilian Vegetable seed industry, visited with Vegetable Laboratory personnel August 6 to discuss vegetable breeding for resistance to diseases and insects.

A handwritten signature in cursive script, reading "A. A. Hanson". The signature is written in dark ink and is positioned above the printed name and title.

A. A. Hanson
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NOTES FROM THE DIRECTOR

No. 21

September 13, 1973

Employee Activities

Drs. R. E. Webb, Kenneth Deahl, and L. L. Sanford, Vegetable Laboratory, presented research papers at the Annual Meeting of the Potato Association of America at Guelph, Ontario, Canada. Others from that Laboratory in attendance were J. A. Schalk, S. L. Sinden, and Miss Muriel J. O'Brien.

Dr. T. H. Barksdale and Mr. Philip Baum, Vegetable Laboratory, were judges for the best home garden contest, July 26, which is held annually at the Soldier's Home, Washington, D. C.

R. E. Anderson, R. E. Hardenburg, and Judith Abbott of the Horticultural Crops Marketing Laboratory presented papers at the 70th Annual Meeting of the American Society for Horticultural Science at Raleigh, North Carolina, June 20-22. Judith Abbott, as a woman horticulturist conducting research with the U.S. Department of Agriculture, was one of three women interviewed by the press while attending the meetings, and was pictured in the Raleigh paper. Judy also described postharvest horticultural research on television in Durham, North Carolina.

Honors

Marketing Research Institute Represented at International Meeting: John A. Hamann of the Dairy and Poultry Products Marketing Laboratory presented the results of the Laboratory's most recently completed research reported in "Improved Methods and Equipment for Boning Turkeys," ARS-NE-17, at the Meat Symposium in Roskilde, Denmark, July 30-August 3. His participation in the conference was through invitation from the European Federation of the World's Poultry Science Association.

Cooperative Activities

Workshop Hosted: On August 17 and 18, Drs. Allan Stoner, Thomas Barksdale, and James Schalk of the Vegetable Laboratory hosted a tomato research workshop. Approximately 30 ARS, State, and industry scientists attended and participated in discussions of tomato improvement and viewed tomato research activities at Beltsville.

Progress on Consolidated Delivery Systems Research: Dr. Harold S. Ricker, Food Distribution Research Laboratory, presented a paper on "Consolidated delivery systems for small retail food stores" at the National Association of Retail Grocers of the United States annual convention in Denver, Colorado, July 29-August 1. The paper presented highlights of work that is being

performed cooperatively between the Pennsylvania State University and ARS and points up the need for changes in our food distribution system for supplying small stores to improve efficiency and meet pending EPA transportation requirements.

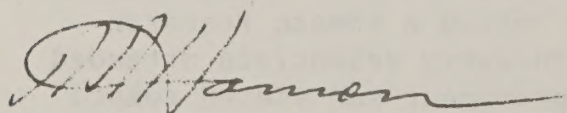
Visitors

Dr. Charles Y. Yang, Department of Plant Pathology, Asian Vegetable Research and Development Center, Shanhua Taiwan, Taiwan, visited the Plant Nutrition Laboratory to discuss soybean production and Rhizobium Culture Exchange on August 31.

Dr. Rodney J. Roughley, Biological and Chemical Research Institute, New South Wales Department of Agriculture, Rydalmere, NSW, Australia, visited the Plant Nutrition Laboratory, to discuss research on soybean nodulation and nitrogen fixation on August 27-28.

The Vegetable Laboratory had several foreign visitors recently. Among them were: Dr. Mohamed Besri, Principal Investigator of a PL 480 project in Morocco on ecology of tomato fusariosis; Dr. Roch W. Doruchowski, Research Institute of Vegetable Crops, Institute Warzywnictwa, Skierniewica, Poland, Principal Investigator of a PL 480 project on angular leaf spot on cucumber; Dr. Eric Darley, Department of Agriculture, Sydney, Australia, to discuss vegetable production systems of various vegetables; Mr. Kenneth McLean, Food and Agriculture Organization of the United Nations, Nigeria, relative to growing tomatoes under tropical conditions, especially cultivars which will set fruit under hot conditions; Dr. Ruben L. Villareal, Asian Vegetable Research and Development Center, Taiwan, relative to tomato and sweetpotato breeding and production under tropical conditions; and Dr. C. P. Hampson, Potato Marketing Board, Knightsbridge, London, England.

The Biochemistry Laboratory has also had several visitors. Mr. Robert Rawlings, President of Alta Lipids, Ltd. of Boise, Idaho, visited Joel Bitman, Randall Wrenn and Leslie Dryden concerning future cooperative work; Dr. W. Barej of the Laboratory of Animal Physiology, Agricultural University of Warsaw, Principal investigator of a PL 480 project which Dr. Oltjen sponsors; and Dr. A. R. Johnson of the Food Research Laboratory, CSIRO, North Ryde, Australia, visited the Laboratory and presented a seminar on recent Australian research on high polyunsaturated ruminant food products.



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NOTES FROM THE DIRECTOR

No. 22

September 27, 1973

Employee Activities

BARC SCIENCE SEMINAR - The first lecture in the BARC Science Seminar Program was presented in the BARC Auditorium on Wednesday, September 19, at 2:30 PM by Professor Georges Ungar of Baylor College of Medicine, Houston, Texas. Professor Ungar's subject was "Evidence for Molecular Coding of Memory." The second lecture of this series will be given by Dr. H. Graham Purchase of the Regional Poultry Research Laboratory at East Lansing, Michigan. Dr. Purchase's topic will be "Control of Marek's Disease (a cancer of chickens) by a Vaccine." This lecture will be presented on Wednesday, October 24, 1973, at 2:30 PM in the Auditorium. All are urged to attend.

Dr. A. M. Heimpel, Chief, Insect Pathology Laboratory, chaired a symposium at the Annual Meeting of the Society for Invertebrate Pathology held at Amherst, Massachusetts. Dr. Heimpel is the Vice-President of the Society.

Mr. A. S. Michael, Chief, Bioenvironmental Bee Laboratory, was invited to serve as Chairman of an ad hoc committee for the James I. Hambleton Memorial Award for outstanding research in the apicultural sciences. This award was presented by the Eastern Apicultural Society at its annual meeting at the University of West Virginia, Morgantown, August 1973.

Mr. Robert F. Guilfooy, Mechanical Engineer, Transportation and Packaging Research Laboratory, recently participated in a meeting of a special engineering task force of Commission D-7 of the International Institute of Refrigeration in Vienna, Austria. The working document for this meeting was a 43-page report recently compiled by Mr. Guilfooy and published by ARS in May, identified as ARS-NE-22 "A Comparison of Methods for Testing the Thermal Performance of Vehicles Used to Transport Perishable Foods."

Martin Jacobson, Biologically Active Natural Products Laboratory, presented an invitational seminar September 10 to entomology students and faculty of the University of Maryland, College Park. His subject was "Recent Progress in Insect Sex Pheromones."

Dr. James L. Vaughn, Insect Pathology Laboratory, attended the annual meeting of the Tissue Culture Association in Boston June 3-8. In addition to the scientific sessions, Dr. Vaughn participated in the business affairs of the Association as Chairman of the Division for Invertebrate Tissue Culture and as the Division's representative on the governing council of the Association.

John T. Worthington, Horticultural Crops Marketing Laboratory, attended the 2nd International Symposium on Vegetable Storage at Freising-Weihestephan, West Germany and reported on his work on maturity sorting of tomatoes. He visited the USDA Laboratory at Rotterdam and the Netherlands research station at Wageningen.

Dr. Jean R. Adams of the Insect Pathology Laboratory presented an invitational seminar on "Virus Invasion of Insect Tissues" at Rutgers University in May.

Wilson Smith, Horticultural Crops Marketing Laboratory, attended and presented two papers at the International Congress of Plant Pathology in Minneapolis, Minnesota from September 4-11. He was Chairman of the Postharvest area of plant pathology.

During the week of June 18, Dr. Cantwell, Insect Pathology Laboratory, was invited to and attended the Environmental Ecology Workshop sponsored and funded by the U.S. Office of Education.

Honors and Awards

Wallace K. Bailey (retired) recently was presented with an award from the American Peanut Research and Educational Association for his contributions to peanut improvement. We have also been informed by the Hebrew University of Jerusalem that 12 trees were planted in his honor in the Hills of Judea. Mr. Bailey was a member of the Applied Plant Genetics Laboratory.

Dr. C. Roy Adair, Collaborator, Applied Plant Genetics Laboratory, received an award from the California Cooperative Rice Research Foundation, Inc. for his contributions to rice improvement in California.

Cooperative Activities

Exchange of Scientists: An agreement between the Agricultural Research Service and Oregon State University has resulted in an exchange of scientists for the period September 1973 to June 1974. Dr. Lowell Woodstock of the Seed Quality Laboratory will carry on his seed research at Oregon State University, Corvallis, and Mr. Rodger Danielson of Oregon State University arrived at Beltsville to work with Mrs. Vivian Toole, Plant Physiologist of the Seed Quality Laboratory.

Virginia Experiment Station Technical Bulletin Being Prepared: A regional manuscript entitled "The relation of soil microorganisms to soil-borne plant diseases", a forthcoming VPI Technical Bulletin, was prepared cooperatively by Experiment Station Scientists in the Southeastern Region and by ARS scientists at Beltsville. The monograph, edited by Dr. George C. Papavizas, includes 17 papers and an extensive bibliography. It will appear by the end of 1973.

Insecticide Discussion: Nine Japanese industrialists met with Drs. Faust, Heimpel and Cantwell of the Insect Pathology Laboratory to discuss the present status of the microbial insecticide, Bacillus thuringiensis.

Joint Research Project: Dr. Spiro J. Louloudes of the Insect Pathology Laboratory spent two weeks at the Hormel Institute in Austin, Minnesota, where he presented a seminar on his work on the lipid requirements of insect cells in culture and participated in a joint research project.

Cooperative Field Surveys: Ashley B. Gurney, Systematic Entomology Laboratory, traveled late in August to northern Idaho and northwestern Washington on a field survey of high-altitude grasshoppers. This survey, in cooperation with entomologists from the University of Idaho and the Oregon Department of Agriculture, was a continuation of previous field work designed to supply specimens and ecological information to be used in taxonomic revisions of several important groups of grasshoppers.

Adapting Intermodal Transportation System: The Transportation and Packaging Research Laboratory has recently begun a study in cooperation with the ARS Rotterdam Laboratory to evaluate the problems of adapting the promising new barge-ship-barge intermodal transportation system for shipping grain and soybeans from the interior river ports in the United States to interior river ports overseas. Such long-distance shipments in which the product is not rehandled at the ocean ports are made possible by huge barge-carrying ships. Two experimental shipments of barges, each loaded with more than 27,000 bushels of yellow corn, are currently en route from Davenport, Iowa, to Leigh, Scotland. Phil Breakiron of the Transportation and Packaging Research Laboratory set up the shipping experiments in cooperation with the De Kaub County Exports, De Kaub, Illinois. Research scientists from the Rotterdam Laboratory will study the shipments at destination.

Putting Research to Work

Instruction Requested: The Refrigerated Division of Common Carrier Conference--Irregular Route, American Trucking Associations, has requested assistance from the Agricultural Marketing Research Institute in a training program for operators and terminal managers of its member truck lines which it is sponsoring during October. Dr. Robert E. Hardenburg of the Horticultural Crops Research Laboratory, Mr. Karl E. Hoke and Phil Breakiron of the Transportation and Packaging Research Laboratory will participate as Instructors in training sessions to be held in Chicago on October 24 and in Atlanta, Georgia, on October 30.

On-The-Spot Inspection: William R. Black, Transportation and Packaging Research Laboratory, was recently asked by the Defense Personnel Support Center of the Department of Defense for an on-the-spot inspection and evaluation of their operations at Bayonne, New Jersey, where lettuce was being transferred to refrigerated van containers for shipment to overseas military commissaries. They had experienced losses in recent shipments. Mr. Black was able to instruct the military inspectors, stevedoring crews, and container operators in the proper use of the ARS-recommended modified bond-block loading pattern to help insure improved air circulation and better refrigeration in transit.

Nematode Treatment: Dr. Julius Feldmesser, Nematology Laboratory, spent April 17-18 at the U.S. Military Academy, West Point, New York, treating the nine acre parade ground, the "Plain", with ethoprop, an experimental nematicide, as part of a continuing study that he and Dr. A. Morgan Golden, also of the Nematology Laboratory, are making of the role of plant-parasitic nematodes in turf and lawngrass culture in the northeast. Dr. Feldmesser detected wide-spread symptoms, probably indicative of nematode damage, on the Plain during a visit there while on vacation, and later confirmed this through root and soil samples. Subsequently, arrangements were made to treat the Plain this spring. The Plain is thought to be one of the largest continuous turf areas, other than commercial turf farms, to be treated for control of nematodes. During the treatment, Newsweek Magazine Broadcasting Service taped a TV interview with Dr. Feldmesser concerning crop losses due to nematodes, and nematode damage to turf and lawngrasses, for distribution to stations throughout the country.

Visitors

The Insect Physiology Laboratory recently had several visitors: Dr. Toshio Kawasaki, Laboratory of Plant Chemistry, Kyushu University, Fukuoka, Japan, to discuss research on natural products chemistry and insect hormones; Dr. Nubuo Ikekawa from the Laboratory of Chemistry for Natural Products, Tokyo Institute of Technology, Tokyo, Japan, discussing research on insect steroids and hormones; Dr. M. N. Gailbraith of the Division of Applied Chemistry at C.S.I.R.O., Melbourne, Victoria, Australia, to discuss mutual research on insect molting hormones; and Dr. A. G. Manoukas, research scientist working at the Nuclear Research Center of the Greek Atomic Energy Commission, to observe techniques and methods used in studying insect nutrition, rearing and metabolism.

Dr. Stephan Peter, Department of Anatomy, Heidelberg University Medical School, Heidelberg, Germany, was a recent visiting scientist with Dr. Russell Steere, Chief of the Plant Virology Laboratory, where he learned to prepare complementary freeze-etch replicas.

A vegetable productivity team of 10 scientists from Japan lead by Shoji Oka visited staff, research facilities and field research plots on September 6 to review ongoing research in the Vegetable Laboratory.

Dr. H. H. Rees, a biochemist from the Department of Biochemistry, University of Liverpool, England, worked three months, June 3 to September 7, at the Insect Physiology Laboratory as a visiting scientist under the ARS Research Associate Program. His particular interest is the biochemistry of insect hormones and steroids.

Recent visitors in the Horticultural Crops Marketing Laboratory to discuss current research included: Dr. George Wade, University of Tasmania, Australia; Dr. Dorothy Derbyshire, Woodthorne, Wolverhampton, England; David L. Byant, Commonwealth Gasses Ltd., Australia; Rafael T. Marino Navas, Gerente General, Instituto Colombiano Agropecuario, Columbia;

Dr. E. C. Darley, Principal Agronomist, Department of Agriculture, New South Wales, Sidney, Australia.

Aileen Lubin and Robert E. Gamber, American Can Company, visited Dr. Raymon E. Webb, Vegetable Laboratory, August 1 to discuss vegetable production under controlled environment.

Dr. William G. Chace, Research Leader, Rotterdam Laboratory, ARS European Marketing Research Center, recently visited various laboratories in AMRI. Dr. Chace is currently in the United States to attend the first meeting of the Transportation Subcommittee of the Marketing Research Coordinating Committee and to tour a number of producing areas throughout the country where experimental shipments of agricultural products evaluated by the Rotterdam Laboratory scientists originate.

AA Hanson/pap

A. A. Hanson
Director

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTHEASTERN REGION
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BELTSVILLE, MARYLAND 20705

NOTES FROM THE DIRECTOR

No. 23

October 18, 1973

Employee Activities

Dr. K. R. Hill, Analytical Chemistry Laboratory, attended the XXVIIth Conference of the International Union of Pure and Applied Chemistry in Munich, Germany, in August, where he presented reports on the nature of the terminal residues of lindane and hexachlorobenzene to the Commission on Terminal Pesticide Residues. At these meetings, Dr. Philip C. Kearney, Pesticide Degradation Laboratory, was appointed to Titular Membership in the Pesticide Section and Terminal Residues Commission and elected Secretary of the Terminal Residues Commission. Dr. Hill was appointed to Titular Membership in the Pesticide Section, the Residue Analysis Commission and the Terminal Residues Commission and elected Chairman of the Terminal Residues Commission.

Mr. L. G. Pickens, Chemical and Biophysical Control Laboratory, departed from Beltsville October 16 for a 6-month appointment with the International Atomic Energy Agency. He will be an Advisor to the Government of Korea on use of radioisotopes in entomology. He will be surveying the stable fly population on the subtropical island of Jae-ju. The Government of Korea, with the assistance of IAEA, hopes to eradicate the fly on the island by the sterile male technique.

Dr. R. Fayer, Histoprotzoan Diseases Laboratory, visited the Institut fur Parasitologie at the Freie University of Berlin to discuss mutual research interests with German scientists. He then attended the 4th International Congress of Protozoologists at Clermont-Ferrand, France, where he was invited to participate in a round-table discussion of the latest developments in research on Sarcocystis and also to present a film.

Dr. J. M. Kaper, Plant Virology Laboratory, participated in an International Symposium on in vitro Assembly of Plant Viruses which was held August 29-31 in Berkeley, California. Dr. Kaper was Chairman of the session on Icosahedral Viruses and gave a historical introduction on the development of research in this area.

Drs. B. Y. Endo, A. M. Golden, W. R. Nickle, and R. M. Sayre, Nematology Laboratory, attended the 2nd International Congress of Plant Pathology in Minneapolis, Minnesota. The Congress was co-sponsored by the American Phytopathological Society and the Society of Nematologists. Dr. William R. Nickle was reelected Treasurer of the Society of Nematologists.

Honors and Awards

Dr. T. O. Diener, Research Plant Pathologist, Plant Virology Laboratory, received the Fellow Award of the American Phytopathological Society for his contributions to plant virology, at the Second International Conference on Comparative Virology at Mont Gabriel, Quebec. While in attendance, he presented an invitational lecture on "Viroids as prototypes or degradation products of viruses." He also participated in this summer's Gordon Research Conference on Cancer at Meriden, New Hampshire, where he was a principal speaker, giving an invitational lecture on viroids.

Dr. Neal O. Morgan, Chemical and Biophysical Control Laboratory, presented an invitational paper "Managing Our Environment Through Agricultural Research" at the 23rd Sanitarians Training Conference, Montana State University, Bozeman, October 1-4. The training conference was sponsored by the Montana State University and the Montana Department of Health and Environmental Sciences.

Visitors

Dr. Gian Guido Re of the University of Turin, Italy, joined the staff of the Plant Virology Laboratory in July as a Rotary International Fellow. Dr. Re will stay in Beltsville for about one year to work with Dr. Kaper of this Laboratory on several aspects of the tertiary and quaternary structure of viral proteins.

Recent foreign visitors to the Mycology Laboratory included several who studied fungus material in the National Fungus Collections. Dr. Emil Muller, Zurich, Switzerland, worked in the Laboratory for a week on collections of Ascomycetes. Dr. Muller is one of the most widely recognized taxonomic authorities on this group of fungi. Among the specimens here, he discovered one that represents a previously unknown species. The Laboratory was also visited by Dr. G. H. Boerema, Plant Protection Service, Wageningen, Netherlands, who is best known for his extensive taxonomic work on the genus Phoma. Other visitors included Dr. Antonio Ciccarone, Bari, Italy; Dr. M. J. Thirumalachar, Poona, Italy; and Dr. D. D. Wani, also of Poona.

The following scientists recently visited the Nematology Laboratory: Dr. Roger Cool, Wales, Great Britain, who is conducting research on the nature and inheritance of nematode resistance in cereals; Dr. J. G. Giebel and Dr. A. Wilski, Posen, Poland, co-principal investigators on a PL 480 project, concerning the biochemistry of plant resistance to nematodes; Dr. L. A. Guskova, Leningrad, USSR, who is concerned with the control of the golden nematode; Dr. J. Heyns, Johannesburg, South Africa, who discussed his program on the taxonomy and distribution of Xiphinema species; Dr. A. Khan, Aligarh, India, Principal Investigator on PL 480 programs on the use of organic amendments and crop rotation for control of nematodes; Dr. M. R. Siddiqi, St. Albans, England, who spent one week with Dr. Golden, reviewing specimens for taxonomic studies; and Dr. U. Wyss, Hanover,

Germany, who discussed aspects of his work on the reaction of tobacco roots to the stubby root nematode; and Dr. Allen Stone, Harpenden, England, who is spending six months in Blacksburg, Virginia, studying species variations in the cyst nematodes.

The Soilborne Diseases Laboratory had several foreign and domestic visitors recently. Among them were: Dr. M. Besri, Principal Investigator of a PL 480 project in Morocco; Dr. A. Ghaffar, Principal Investigator of a PL 480 project in Pakistan; Dr. C. Populer, Station De Phytopathologie de l'Etat, Gembloux, Belgium; Mr. R. Ausher, Ministry of Agriculture, Israel; Dr. S. G. Georgopoulos, University of Athens, Greece; Drs. T. Kato, J. Kato, and K. Ueda, Sumitomo Chemical Company, Japan; Dr. D. Rudd-Jones, Glasshouse Crops Research Institute, England; Drs. Bouhot and Louvet, Dijon, France; Dr. H. C. Weltzien, American University of Beirut, Lebanon; Dr. K. M. Hameed, Iraq; Dr. H. P. Schuepp, Zurich, Switzerland; Dr. G. E. Cook, USDA, Nigeria; and D. Yoder, Hunt Wesson Foods, California.

The Vegetable Laboratory had several visitors. Among them were: Dr. A. G. Prendergast, Director, Plant Pathology Department, the Agricultural Institute, Oak Park, Carlow, Ireland, whose interest was club root of crucifers, scab, late blight, and general aspects of potato breeding in relation to disease resistance; Drs. Noel, Robertson and Richard C. F. Macer, Edinburgh University, School of Agriculture, Edinburgh, Scotland, to discuss research on genetics of resistance to late blight in potato; Dr. Moises Rondon, Empresa Publica Servicios Agropecuarios, Lima, Peru, to discuss the various facets of potato breeding programs underway in the Laboratory; and Dr. Den-jong Chiee, Plant Industry Division, JCRR, Taipei, Republic of China; Mr. and Mrs. Ride, Station de Phytobacteriologie, INRA ranke de S'Clement, Beancringe 2900, Angers, France; and Ian F. Storey, Ministry of Agriculture, Fisheries, and Food, Shardlow, Derby, England, to discuss research on mushrooms done in the Laboratory.

Two scientists from the Laboratory of Parasitology, The National Institute of Agriculture, Madrid, Spain, are spending part of their sabbatical leave at the Animal Parasitology Institute. Dr. Eduardo Cardenosa Respaldiza will work for 11 weeks in the Histoprotzoan Diseases Laboratory working on problems of poultry coccidiosis, and Dr. Jose Vilas Tarazona will be with the Haemoprotzoan Diseases Laboratory for six weeks working on anaplasmosis and babesiosis of cattle.

Since August 6, Augustine Mosi, an Afgrad Fellow from Ghana, has been working in the Nutritional Microbiology Laboratory. His research concerns measuring the synthesis of rumen microorganisms using N^{15} . The research conducted at Beltsville will fulfill the research requirements for a PhD. degree for Mr. Mosi at Colorado State University.

Mr. Yoshio Hasegawa, Councilor of the Nittu Research Center in Tokyo, Japan, as head of a 5-man research group visited the Transportation and Packaging Research Laboratory to discuss U.S. transport systems for frozen foods with Robert Guilfooy.

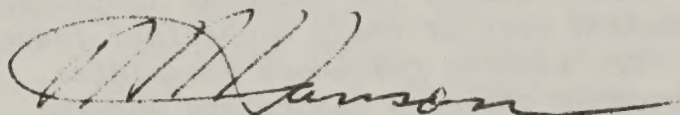
Dr. Jean Marrou of the Institute National de Recherche Agronomique (INRA or French ARS) visited the Plant Virology Laboratory on September 17-18. The purpose of the visit was to set up a program of future collaboration and exchange on problems regarding cucumber mosaic and related viruses with Dr. J. M. Kaper of this Laboratory.

Putting Research to Work

Synthesizing Analogs of Rhizobitoxin Discussed: Drs. Arthur Stempel, Dennis D. Keith, and Alex Emedy, of the Research Division of Hoffmann-La Roche Inc., visited Drs. M. Lieberman, L. Owens, M. Faust and R. Zimmerman on September 21. The Hoffmann-La Roche scientists are interested in synthesizing analogs of rhizobitoxin and testing them for ethylene inhibition. Rhizobitoxin is a specific inhibitor of ethylene biosynthesis, discovered at Beltsville, and may act to retard ripening and aging reactions induced by ethylene. There are, therefore, considerable commercial possibilities for the use of such compounds.

Whey Utilization Studied: Frank McDonough of the Dairy Foods Nutrition Laboratory was recently invited to a meeting with Capitol Milk and Southern States Cooperative to provide information on composition and nutritional aspects of whey. As a result of the world protein shortage, interest in whey utilization is at an all time high. There will be increased emphasis on using whey to help fill the protein gap rather than having it considered a pollutant.

Anti-Tumor Agent Collected: The Medicinal Plant Resources Laboratory has successfully completed a crash program which resulted in obtaining 6,000 pounds of meadow rue seed. "Thalicarpine", the anti-cancer agent produced from this seed is scheduled for clinical evaluation in 150 cancer patients in December. A major effort by the entire Laboratory staff resulted in collecting three times as much seed as first anticipated at less than half the cost per pound.



A. A. Hanson
Director

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NOTES FROM THE DIRECTOR

No. 24

November 15, 1973

Employee Activities

BARC SCIENCE SEMINAR. Dr. H. Graham Purchase of the Regional Poultry Research Laboratory, East Lansing, Michigan, presented the second Science Seminar Lecture on "Control of Marek's Disease (a cancer of chickens) by a Vaccine." Dr. Purchase presented an excellent review of the work in his laboratory which developed the vaccine now being used commercially to control Marek's Disease in poultry. This is a fine example of the solution of a serious commercial problem in agriculture by agricultural research in ARS.

Dr. C. Edith Weir, Assistant Director, BARC, was recently designated to serve as the Department of Agriculture's representative on the President's Committee on Mental Retardation. One important objective of the Committee is to improve maternal nutrition and thus reduce mental retardation.

Dr. John McGrew was host to representatives from eight States at the Seventh Biennial Conference of Eastern Grape Breeders held at BARC on September 20-21. Included in the program were papers, discussions, and a visit to Maryland's own Boordy Vineyard.

Drs. Harry L. Keil, Tom van der Zwet, C. B. Shear, John L. Maas, and Edwin L. Civerolo, Fruit Laboratory, attended the 2nd International Congress of Plant Pathology that was held at the University of Minnesota and annual meeting of the American Phytopathological Society. Dr. van der Zwet chaired a symposium on fire blight and presented a paper.

Dr. Charles Sloger, Plant Nutrition Laboratory, presented a selected paper entitled "Seasonal and diurnal variations in N_2 (C_2H_2)-fixing activity of field soybeans" at the I.B.P. International Synthesis Meeting, "Nitrogen Fixation and the Biosphere", in Edinburgh, Scotland, September 17-22.

Dr. Lowell D. Owens, Soil Scientist, returned to BARC upon completion of an assignment as Agriculturist (USDA Liaison) with South Carolina State College at Orangeburg. He is assigned to the Plant Nutrition Laboratory and will conduct research on nitrogen metabolism and plant cell and tissue culture.

Cooperative Activities

Dr. T. Takahashi, Iwate University, Morioka, Japan, is working for a year as a Foreign Research Associate with Dr. T. O. Diener in the Plant Virology Laboratory. Dr. Takahashi is sponsored by the Ministry of Education of

Japan to study the mode of replication of the potato spindle tuber viroid (PSTV) and to elucidate mechanisms of pathogenicity following viroid infection.

Dr. Stanislaw Dzieniz from Poland began a 10-month period of research with the Plant Nutrition Laboratory in mid-September on an IREX Fellowship. He is working with Drs. Stanford and Legg, determining some of the effects of tillage systems on nitrogen relationships in soils. Dr. Dzieniz is engaged in both teaching and research at the Institute of Soil and Plant Cultivation of the Agricultural Academy, Szczecin, Poland.

Putting Research to Work

Several years ago the Soilborne Diseases Laboratory developed a simple technique for determining the disease potential in soil infested with the fungus Rhizoctonia solani. This technique is used in the Netherlands commercially for assaying potato fields. Heinz U.S.A., a Division of H. J. Heinz Company, has recently requested assistance from the Soilborne Diseases Laboratory in determining disease potential of Mississippi soils scheduled to grow tomatoes and in training one of their scientists to handle the assay. C. A. John, Manager for Agricultural Development of Heinz, U.S.A., has already visited with Dr. G. C. Papavizas.

Visitors

Dr. D. B. Gammack, Director of Research, Unigate Company, London, England, recently visited the Dairy Foods Nutrition Laboratory to discuss our work on fractionation of cheese whey. He was particularly interested in the protein functionality and the types of products which would be most compatible for nutritional enhancement.

Dr. H. P. Upadhyay, In Charge of the Mycological Institute of the Federal University at Pernambuco, Brazil, visited the Mycology Laboratory for ten days to study specimens of Ceratocystis and other tree-disease fungi which are distributed by the activities of bark beetles. Dr. Upadhyay is currently working for a year at the University of Waterloo in Canada.

Two bus loads of florists, growers, wholesalers, and retailers from Ohio viewed and discussed research on the use of lighting to control plant growth. On September 26, this group was welcomed to Beltsville Agricultural Research Center by Dr. C. Edith Weir who explained the total research effort at Beltsville. The remainder of the afternoon was spent in touring research facilities and presentations of research. The Laboratories visited were Vegetable, Ornamentals, Physical Control, Biological Waste Management, Air Pollution, and Light and Plant Growth. There was also an evening session in which various Laboratory representatives explained in greater detail how light, chemicals, temperature, and CO₂ can be used to regulate plant growth.

Interest was shown in the program of the Seed Quality Laboratory by fourteen Brazilian science students when they visited our Laboratory while on tour at Beltsville on October 24. They were accompanied by Dr. Bunch, Mississippi State University.

The following foreign scientists visited the Vegetable Laboratory staff to discuss research of mutual interest in vegetable disease epidemiology, potato breeding for disease and insect resistance and improved quality, mushroom improvement, and vegetable entomological research: Dr. C. Populer, Station de Phytopathologie, Gemblaux, Belgium; Dr. Barbara Lund, ARC Food Research Institute, Colney Lane, Norwich, England; Dr. G. J. Persley, Bureau of Sugar Experiment Station, Brisbane, Australia; Dr. Alexandru Barbulescu, Research Institute for Cereals & Technical Plants, Fundule, Romania; Dr. Takuma Morita, Faculty of Agriculture, Tokyo University of Agriculture and Technology, Fuchu, Tokyo 183, Japan; Mr. Gonzalo Claure, Est. Experiment Agricola, "Toralapa" Cochabamba, Bolivia; and C. William Lee and Elugn Owan, Instituto Agr. Adventista De, Central America.

Mr. William Cibula, NASA Earth Resources Laboratory, Mississippi Test Facility, Bay St. Louis, Mississippi, visited the Mycology Laboratory on September 20. At the Mycology Seminar, Mr. Cibula discussed (1) his research on pigment chromatography in the mushroom genus Hygrophorus, and (2) the ecological studies of the NASA Earth Resources Laboratory concerned with vegetation mapping and other ecological analyses from satellites and high-flying aircraft.

Dr. Patricio Ponce de Leon visited the Mycology Laboratory for four days studying Giant Puffball and Earthstar fungi. Dr. Ponce de Leon is Curator, Cryptogam Herbarium, Field Museum of Natural History, Chicago, Illinois.

Foreign visitors during September and October to the Fruit Laboratory included the following:

Dr. D. Martin, Officer in Charge, Tasmanian Regional Laboratory, Tasmania, Australia, to discuss calcium experiments on the York spot of apples.

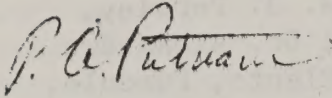
Dr. R. Schulz, Institute of Horticultural Management and Market Research, West Germany, and Dr. R. A. Lelliott, Plant Pathology Laboratory (Bacteriology and Virus Diseases Section), Hertfordshire, England, to discuss fire blight of pears.

Dr. Bauckmann, Institute of Fruit Growing, Rheingau, Germany, to discuss small fruit growing.

Dr. H. Borecka, Department of Fruit Processing, and Professor Z. Borecki, Department of Disease Control, Research Institute of Pomology, Skierniewice, Poland, to discuss fruit breeding, fire blight, Cytospora canker, bacterial spot, apple scab, and powdery mildew.

Dr. G. Populer, Ministry of Agriculture, Department of Agricultural Research, Research Station for Phytopathology, Gemblaux, Belgium, to discuss bacterial and fungus diseases of fruit trees.

Dr. J. Bech-Andersen, Department of Plant Pathology, Royal Veterinary and Agricultural University, Kobenhavn, Denmark, and Dr. Eve Billing, Department of Plant Pathology, East Malling Research Station, East Malling, Kent, England, to discuss fire blight of pears and apples.



P. A. Putnam
Acting Director

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NOTES FROM THE DIRECTOR

No. 25

November 29, 1973

Employee Activities

Dr. H. Shimanuki, Bioenvironmental Bee Laboratory, attended the XXIVth International Congress of Apiculture in Buenos Aires, Argentina, in October. He presented a paper on Nosema disease of the honey bee and also acted in the capacity of President of the Commission of Bee Pathology for the Congress. While in South America, Dr. Shimanuki visited various research institutions to gain further information on the African-Brazilian bee and on bee research in South America. He also visited in Panama and Mexico to consult with officials and research workers on the control of bee diseases.

On November 6-7, Dr. W. D. Schultze of the Genetics and Management Laboratory and Mr. N. W. Hooven, Jr. of the Animal Operations Unit, appeared on WRC Channel 4 on the "Down to Earth" program. Dr. Schultze discussed the Genetics and Management Laboratory's research program on mastitis of dairy cattle. Mr. Hooven discussed his research work on methods of identifying farm livestock. These filmed discussions will be distributed to television stations around the nation for use on farm news programs.

Dr. L. V. Knutson, Chairman, IIBIII, attended the meeting of the Eastern Branch of the Entomological Society of America in New York, October 31-November 2, and chaired a symposium on Aquatic Insects as Indicators of Water Quality.

Dr. Robert F. Whitcomb, Insect Pathology Laboratory, attended the First International Congress of Systematic and Evolutionary Biology at Boulder, Colorado, August 4-12 and presented results on ecology of insect vectors of plant virus and mycoplasma diseases. From September 10-12, he attended the Second International Congress of Plant Pathology where he participated in a Colloquium on structure and antibiotic treatment of plant mycoplasmas.

Dr. Harold S. Ricker, Mr. Richard K. Overheim, Mr. Daniel M. Steckler, and Mr. Jack L. Runyan of the Food Distribution Laboratory, attended the 14th Annual Meeting of the Food Distribution Research Society, October 14-17 in Columbus, Ohio. Dr. Ricker, Mr. Steckler, and Mr. Runyan presented papers discussing three of the Laboratory's research projects - Solid Waste Management, Produce Handling, and Mechanized Warehouse Operations. Dr. Ricker was reelected Secretary-Treasurer of the Society and Mr. Runyan was appointed as his assistant.

Cooperative Activities

Graduate Study: As part of cooperative activities, the Department of Botany, Southern Illinois University, Carbondale, Illinois, sponsored Mr. G. Craig Colclasure, graduate student, to work for 10 weeks in the summer of 1973, in the Plant Hormone and Regulators Laboratory, Plant Physiology Institute. Mr. Colclasure's research was on brassins.

Research Results: George M. James and B. Hunt Ashley of the Transportation and Packaging Research Laboratory have been invited to write a paper for the Journal of Packaging Development on the results of their research on standardization of shipping containers for fresh meats.

Summary of Progress: Mr. Jack R. Coulson, Chief, Beneficial Insect Introduction Laboratory, attended the U.S. Army Corps of Engineers' Research Planning Conference on Integrated Control Systems for the Aquatic Plant Control Program held at the Corps Waterways Experiment Station, Vicksburg, Mississippi, October 29-30. Mr. Coulson presented a summary of a report, commissioned by the Corps, entitled "Biological Control of Alligatorweed, 1959-1972, a Progress Report and Evaluation - The Alligatorweed Flea Beetle, Agasicles hygrophila Selman and Vogt."

Cooperative Research Planned: Robert F. Guilfooy, Mechanical Engineer, Transportation and Packaging Research Laboratory and Ronald W. Penney of the Horticultural Crops Marketing Laboratory met with officials of the Refrigerated Division of the Truck Body Equipment Association in Chicago recently to plan cooperative research. TBFA is interested in supporting research by ARS engineers to determine heat gains in refrigerated delivery trucks caused by door openings during store delivery operations.

Jet Freight Instrumentation: B. Hunt Ashby and Karl E. Hoke of the Transportation and Packaging Research Laboratory recently traveled to the Harrisburg, Pennsylvania, airport at the request of the Holstein-Friesian Service, Inc., to instrument a jet air freighter load of Holstein Heifers for shipment to Poland to help insure maintenance of optimum environmental conditions during the trans-Atlantic flight.

Shock and Vibration Research Planned: Phil Breakiron, Chief of the Transportation and Packaging Research Laboratory, met recently with representatives of the Association of American Railroads, The Federal Railroad Administration of the Department of Transportation, and Michigan State University to plan cooperative research on the effects of shock and vibration in railroad piggyback shipments of perishable products.

Putting Research to Work

Animal Physiology Institute Method Used as Official Test for Anaplasmosis: The anaplasmosis card test which was developed by a research team at API has been recognized by APHIS as an official test for the disease. Mr. Gene Amerault, who worked on the development of the test, has been invited to attend five regional training sessions to help train APHIS personnel in the use of this new test. Anaplasmosis is one of our most costly cattle diseases and the rapid card test will help to reduce this loss.

Visitors

Dr. Vincent Demoulin, University of Liege, Belgium, visited the Mycology Laboratory on October 16. Dr. Demoulin is a leading authority on taxonomy and ecology of puffballs in the family Lycoperdaceae.

Dr. Antonio Ciccarone, Plant Pathologist-Mycologist at Bari, Italy, visited the Mycology Laboratory in September. He has worked on the fungus diseases of such crops as oranges, almonds, olives, and tomatoes. Over 70 of his publications are in the National Fungus Collection of this Laboratory.

Professor Tetsuo Sakai of the Faculty of Agriculture, Tamagawa University, Japan, and Mr. Daisaku Shimotori, Vice-President of Shimotori Bee Keeping Company, visited the Bioenvironmental Bee Laboratory for two days in October.

Recent foreign visitors to the Systematic Entomology Laboratory include the following individuals:

Dr. M. D. Murray, McMaster Laboratory, CSIRO, Sydney, Australia, to study Asian and Pacific Culicoides;

Dr. B. Manojlovic, Institute for Plant Protection, Zemun, Yugoslavia, to discuss elm bark beetle parasites and secondary parasites;

Dr. David Rosen, Rehovot Agricultural College, Israel, to study Chalcidoidea and confer with Dr. Burks on problems of classification;

Dr. R. C. Cobben, Laboratorium voor Entomologie, Wageningen, Netherlands, to study Saldids;

Dr. Jerzy J. Lipa, Institute of Plant Protection, Mieczurina 20, Poznan, Poland, to discuss biological control of weeds;

Professor Dr. Seiroku Sakai, Daito Bunka University, Tokyo, Japan, to examine and photograph Dermaptera in the National Museum of Natural History Collection;

Dr. Eugene Munroe, Biosystematics Research Institute, Ottawa, Canada, to study neotropical Polygrammodes and Anarmodia and Nearctic Pyraustinae for a book, "Moths of North America"; and

Dr. Ichiji Togashi, Ishikawa Agricultural College, Suematsu, Nonoichi, Michi, Ishikawa Prefecture, Japan, to study sawflies and their parasites.

Recent visitors to the Transportation and Packaging Research Laboratory included:

Egardo Rondon Castro, Engineer, Empresa Publica De Servicios Agropecuarios, Lima, Peru, to discuss bulk transportation and handling of potatoes;

Howard J. Kuntz, Executive Vice President, Burlington Ribbon Mills, New York, and Victor T. Podd, Director of Marketing of Caristrap Corporation of Montreal, Quebec, Canada, to discuss the substitution of nylon straps for steel meat hooks for suspending carcasses of fresh meat during transportation.

C Edith Weir

C. Edith Weir
Acting Director

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BELTSVILLE, MARYLAND 20705

November 29, 1973

Subject: "Notes From the Director

To: P. A. Putnam

I am very much disturbed about the quality of our "Director's Notes". We are receiving far too much trivia - attendance at conferences and meetings - and not enough real solid items about accomplishments.

I am afraid we will loose our audience if we put in too much gossip. I will be glad to spend my time writing items of significance if letters or rough notices are sent in regarding the activity. The letter from Dr. Enzie to APHIS is an example of what can be done along this line if the people in the Institutes do not want to prepare the notice themselves.

All the attached items are questionable from my point of view.

Clarence S. Britt

Clarence S. Britt
Management Operations Officer

Enclosures

*take care of in Dec
pap*

Animal Parasitology Institute Method Used As Official Test for Anaplasmosis

The Anaplasmosis Card Test which was developed by a research team at API has been recognized by APHIS as an official test for the disease. Mr. Gene Amerault, who worked on the development of the test, has been invited to attend five regional training sessions to help train APHIS personnel in the use of this new test. Anaplasmosis is one of our most costly cattle disease and the rapid card test will help to reduce this loss.

BELTSVILLE AGRICULTURAL RESEARCH CENTER
ANIMAL PARASITOLOGY INSTITUTE
BELTSVILLE, MARYLAND 20705

NOV 8 1973

*Noted from
Director's office?*
1244

Subject: Participation by Thomas E. Amerault in APHIS Training Programs

To: E. A. Schilf
Senior Staff Veterinarian
Cattle Diseases, APHIS

We are pleased to have Gene Amerault take part in the several training programs planned for APHIS personnel on use of the card test for the diagnosis of anaplasmosis. We are very happy, of course, that the product of our researches has provided an effective tool for this purpose. Recognition of the procedure by your agency as an official test is most gratifying to Gene, Tom Roby, and all of their associates in the anaplasmosis research program at this Institute.

It is a pleasure to cooperate with you in putting research to work in this area of mutual interest and concern.

F. D. Enzie

F. D. Enzie
Chairman

cc:

Dr. A. A. Hanson ✓
Mr. T. E. Amerault
Dr. T. O. Roby
Dr. R. C. Fish

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
VETERINARY SERVICES
FEDERAL CENTER BUILDING
HYATTSVILLE, MARYLAND 20782

November 6, 1973

Subject: Anaplasmosis Card Test

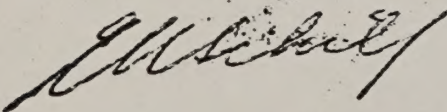
To: F. D. Enzie
Chairman, Animal Parasitology
Institute
Agricultural Research Service

The anaplasmosis card test, which was developed by the ARS research team at Beltsville, has proved to be an accurate, highly useful test. APHIS has recognized the card test as an official test for the disease. Training courses are being planned for each of our five regions to train our laboratory and field personnel to conduct both the card serum and card plasma test. The courses are scheduled as follows:

November 27-28	-	Oklahoma City, Oklahoma
December 11-12	-	Atlanta, Georgia
January 8-9	-	Columbus, Ohio
January 22-23	-	Denver, Colorado
February 5-6	-	San Francisco, California

We would like Mr. Gene Amerault, who worked on development of the test, to help train our people in its use at each of these training courses.

Anaplasmosis is one of our most costly cattle diseases and the rapid card test will be a very useful tool in helping to reduce this loss.



E. A. Schilf
Senior Staff Veterinarian
Cattle Diseases

